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ABSTRACT

This second volume in a two-volume series which contain training modules on the education of children and youth with dual sensory and multiple impairments focuses on preservice or inservice training of service providers who deliver educational services to these children. The five modules in this volume address the following areas: (1) introduction to the population of children with dual sensory and multiple impairments; (2) functional curriculum development and implementation; (3) communication skills development; (4) mediation of challenging behaviors; and (5) related services and the transdisciplinary approach to service delivery. A general introduction lists recommended trainer competencies and describes module format. Modules are intended to be presented in one to five 90-minute sessions. Each module consists of six sections: general information or overview, training instructions, one or more topic sections (depending on the breadth of coverage), sources of additional information, evaluation measures, and appendices. (DB)

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ED 360 759

A SERIES OF TRAINING MODULES ON EDUCATING CHILDREN AND YOUTH WITH DUAL SENSORY AND MULTIPLE IMPAIRMENTS

Volume 2
Service Provider Training Manuals

1990

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1 A series of Training Modules on Education Children and Youth with Dual Sensory and Multiple Impairments

2 Service Provider Training Modules Overview

3 Introduction to the Population of Children and Youth with Dual Sensory and Multiple Impairments

4 Functional Curriculum Development and Implementation

5 Communication Skills Development

6 Mediating Challenging Behaviors

7 Related Services and the Transdisciplinary Approach

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ACKNOWLEDGEMENTS

The development of these training modules was undertaken as a way to provide systematic training for parents and service providers of children and youth with dual sensory and multiple impairments.

A number of individuals contributed during the development process. Thanks are extended to members of the advisory committee for the Great Lakes Area Regional Center for Deaf-Blind Education. These individuals played a pivotal role during the conceptualization and design of this training endeavor. The advisory board members who guided this effort are Margaret Niederer, Charlie Crowley, and Virgil Krone of Illinois; Andy Papineau and Sheryl Beyers of Wisconsin; Bill Ohrtman, Don Sundell, and Donna Rhoades of Pennsylvania; and Joe Todd and Sue Schneider of Ohio. Two additional Title VI-C Coordinators were also instrumental during module development and testing. They are Karen Goehl from Indiana and Jerry Petroff from New Jersey .

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Personnel from the TASH-TA Project and the Great Lakes Area Regional Center carried out a number of tasks during development of these training modules. Specifically, staff from both projects identified key professionals in the field to author the modules, and then jointly organized and implemented module development with regard to format, final content, field testing, and evaluation measures. The final version of the modules includes suggestions from field test participants in states served by the Great Lakes Area Regional Center, as well as personnel from New Jersey and Indiana.

Requests for the training modules from within Ohio, Pennsylvania, and Wisconsin should be addressed to the Great Lakes Area Regional Center in Columbus, Ohio. Dissemination of the modules to states other than those listed above should be addressed to Teaching Research Publications in Monmouth, Oregon.

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A SERIES OF TRAINING MODULES ON EDUCATION OF CHILDREN AND YOUTH WITH DUAL SENSORY AND MULTIPLE IMPAIRMENTS

SERVICE PROVIDER TRAINING MODULES

I. Introduction

The materials contained in this volume are designed for personnel who train service providers of children and youth with dual sensory impairments. The content of these modules varies from awareness level (i.e., information only) to knowledgeable and application levels as well. These modules are designed for use in either preservice or inservice personnel preparation activities to enhance the delivery of effective educational services to children and youth with dual sensory and multiple impairments.

This series of modules is organized as follows:

A. Introduction to the Population of Children and Youth with Dual Sensory and Multiple Impairments
B. Functional Curriculum Development and Implementation
C. Communication Skills Development
D. Mediating Challenging Behaviors
E. Related Services and the Transdisciplinary Approach to Service Delivery

II. Trainer Competencies

The modules serve as a guide for delivering specific information on a series of best practice content areas. They are intended for use by trainers competent in each respective content area. At a minimum, it is recommended that trainers meet the following criteria:

A. Demonstrated expertise (i.e., knowledge and experience) in the content area of the module being used.
B. Demonstrated abilities to deliver information using a multisensory approach to training.
C. Demonstrated abilities to facilitate group discussion.
D. Demonstrated competencies in using effective inservice training strategies.
E. Desire to be part of a systematic training effort as evidenced by thorough preparation and organization.
F. Demonstrated abilities to communicate clearly and effectively.
G. Demonstrated commitment to the philosophical orientation of best educational practices for children and youth with dual sensory and multiple impairments.

III. Format of the Modules

Each module follows a consistent format and is comprised of six or more sections. The sections are listed below:

A. General Information - Overview
B. Training Instructions
C. One or More Topic Sections Depending on the Breadth of Coverage
D. Sources for Additional Information
E. Evaluation Measures
F. Appendices

A description of each section follows:

A. General Information - Overview

This section includes a written statement regarding the purpose of the module, the intended audience, the level of training (e.g., awareness) and entry level skills for participants (if applicable). General outcome competencies are listed to help clarify the objectives of the training session, to serve as a framework for delivering the content, and to guide evaluation activities.

Additional information on time estimates per lecture, and the materials and equipment required for delivery of the module are included as well. This information is designed to assist potential trainers as they organize their presentations.

Special instructions for delivery of the module (e.g., limiting the use of professional jargon) is the final component of this section.

B. Training Instructions

This section of the module describes three aspects of module delivery. A recommendation for adequate preparation is made with a reminder to review the suggested readings that served as the basis for modular content.

Suggestions regarding delivery of the module are described as well. The use of videotapes, overhead transparencies, and handouts is emphasized.

The last component of this section is a description of the "training tips. Training tips are found throughout the narrative of the modules and are designed to serve three functions. Those functions are:

1. A reminder to display overhead transparencies and to distribute handouts as appropriate. Please note that all recommended overhead transparencies and handouts are found in the appendices for each module.

2. A reminder to pause when appropriate, ask for questions from the participants, and provide examples to supplement the narrative.

3. A reminder to initiate a small group training activity. The training activities are included in the module at the conclusion of each section of content.

C. Content Sections

Each of the modules contains one or more content sections depending on the breadth of coverage. Each content section also follows a specific format consisting of six or seven subsections. The subsections are described below:

1. Module delivery organization. This subsection lists the number of lectures, the amount of time required for delivery of the lectures, and the specific outcome competencies the participants are expected to gain from this content.

2. Content overview outline. This subsection lists an outline of the content.

3. Suggested readings for the trainer. This subsection consists of a list of the readings and other media that served as the basis for development of the modular content. It is recommended that the trainer obtain these resources and master the content prior to delivering the module. Many of the resources listed in this subsection are considered to be "classics " in the field of special education and provide the philosophical, and/or theoretical bases for the modular content.

4. Introduction to the content. This subsection is an outline of what the trainer should say and do to initiate delivery of the first lecture. This subsection includes a training tip regarding presentation of an overhead transparency that summarizes the outline of the content. This is designed to serve as an "advance organizer" for the participants and trainer.

5. Specific content. This subsection contains the actual modular content. The content may be in outline or a narrative depending upon the writing style of the module authors. Training tips are embedded throughout the specific content subsection.

6. Training activities. Each content section concludes with a subsection that contains one or more training activities. The training activities are designed to provide a balance between a lecture format and audience participation. Training activities may be conducted at the end of the lecture for this subsection, or may occur earlier as indicated by a training tip.

7. Scenarios/vignettes. Some content subsections contain one or more scenarios or vignettes. Typically, these are used as part of a training activity and contain detailed information about hypothetical cases involving children and youth with dual sensory impairments. Instructions for use of the scenarios/vignettes are included within the subsection, or may be found in the previous subsection titled, "Training Activities."

D. Sources for Additional Information

Each module contains an extensive list of resources that may be used to supplement the content area. The variety of resources include commercially available print media, publications from professional organizations, and videotapes available from state departments of education. The resource list contains the full reference for each document, the publisher's address and phone, as well as the approximate cost to rent or purchase the material.

E. Evaluation Measures

Each module contains one or more evaluation measures depending on the level of the training (i.e., awareness vs. knowledge). Every module contains a "Participant Evaluation of Training" which is designed to serve as a consumer satisfaction measure. Each of several statements regarding the presentation are rated on a five-point scale by participants. Sample statements include: "I learned useful information about characteristics and types of communication as a result of this training", or "The training provided specific information that I can apply." The five-point scale ranges from "Strongly Disagree" (1 point) to "Strongly Agree" (5 points).

These specific statements about the training activity are supplemented by a series of open-ended questions that request participants to describe (in a short paragraph) the ways in which they see themselves using the training, specifically the strengths of the training, any follow-up needs identified through participation in this particular training session, and ways in which the module and/or training activity could be improved are considered.

The content modules also include a pre/post evaluation measure. The pre/post evaluation was developed by module authors to serve as a measure of the effectiveness of the training session. The pre/post evaluations are objective tests and consist of a series of short-answer and multiple choice questions, as well as true/false statements. The length of time permitted to complete the test and the number of points per question are included. An answer key is provided as well.

F. Appendices

Each module concludes with one or more appendices. The first appendix contains printed pages designed to be made into overhead transparencies for use during presentation of the modular content. The second appendix consists of the handouts referred to in the narrative. The trainer should make copies of each handout available to all the participants.

INTRODUCTION TO THE POPULATION OF CHILDREN AND YOUTH WITH DUAL SENSORY AND MULTIPLE IMPAIRMENTS

Parent and Service Provider Training Module

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1990

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I. General Information - Overview

A. Parent and Service Provider Training Module

An Introduction to the Population of Children and Youth with Dual Sensory and Multiple Impairments.

B. Purpose of the Module

This training module provides an introduction to the population of children and youth identified with dual sensory and multiple impairments. This population is very heterogeneous resulting in the development of educational programs and approaches that vary depending upon the nature and severity of the impairments. The primary focus of this module is to provide a description of the population of children and youth identified with dual sensory impairments, who also have additional disabling conditions, such as mental retardation, physical impairments, and other health impairments.

C. Intended Audience

This awareness level training module is designed for parents, family members, administrators and related services providers who may benefit from information about children and youth with dual sensory and multiple impairments. This module is also appropriate for paraprofessionals.

D. Level of Training

Awareness

E. Entry Level Skills or Prerequisites

Participation in this training session does not require any prerequisite or entry level skills.

F. General Outcome Competencies

Participants will receive the following information:

1. The heterogeneity of the population of children and youth identified with dual sensory and

multiple impairments

2. The incidence of children and youth identified with dual sensory and multiple impairments

3. Implications of dual sensory and multiple impairments for the development of educational programs

4. History of service delivery to children and youth with dual sensory impairments

5. Resources for services to children and youth with dual sensory and multiple impairments

G. Module Delivery Organization

1. Number of Lectures: 1

2. Amount of Time: This training session is designed to precede the specific content modules for parents and service providers and should be completed in ninety minutes.

3. Materials and Equipment: The videotape, "Within Reach," a 1/2" VHS video player, and a TV monitor is required. The trainer will also require the use of an overhead projector. Additional audio-visual materials may be used at the trainer's discretion.

H. Special Instructions

The trainer should be sensitive when addressing disabling conditions of an individual by acknowledging the individual first and the disability second. For example, the trainer should use the reference "a child who is deaf-blind and has multiple impairments" rather than "a deaf-blind multihandicapped child." These two terms, "deaf-blindness" and "dual sensory impairments," are used interchangeably throughout the module.

I. General Suggested Readings and Media for the Trainer

Sections of the content in the readings and media listed below served as a basis for the development of this module. The trainer should obtain these resources and master the material prior to delivering the module.

Blackman, J.A. (1983). *Medical aspects of developmental disabilities in children birth to three: A resource for special service providers in the educational setting.* Iowa City: University of Iowa, Department of Pediatrics, Division of Developmental Disabilities.

Bullis, M., & Bull, B. (1986). *Review of research on adolescents and adults with deaf-blindness.* Washington, DC: The Catholic University National Rehabilitation Information Center.

Fredericks, H. D., & Baldwin, V. L. (1987). Individuals with sensory impairments: Who are they? How are they educated? In L. Goetz, D. Guess, & K. Stremel-Campbell (Eds.), *Innovative program design for individuals with dual sensory impairments* (pp. 3-12). Baltimore: Paul H. Brookes.

McInnis, J., & Treffry, J. (1982). *Deaf-blind infants and children: A developmental guide.* Toronto, Ontario: University of Toronto Press.

Orelove, F. P., & Sobsey, D. (1987). Sensory impairments. In F. P. Orelove & D. Sobsey (Eds.), *Educating children with multiple disabilities: A transdisciplinary approach* (pp. 105-128). Baltimore: Paul H. Brookes.

Roberts, S., Helmstetter, E., Guess, D., Murphy-Herd, M., & Mulligan, M. (1984). Characteristics of persons who are deaf-blind. In S. Roberts, E. Helmstetter, D. Guess, M. Murphy-Herd, & M. Mulligan (Eds.), *Programming for students who are deaf and blind* (pp. 3-8). Lawrence: University of Kansas, Department of Special Education.

Stahlecker, I., Glass, L., & Machalow, S. (1984). *State-of-the-art: Research priorities in deaf-blindness.* San Francisco: Research and Training Center on Deafness and Mental Health.

TASH Technical Assistance Project and Oregon Department of Education (Producers)., Otis, M., & Brush, P. (Directors). (1987). *Within reach: Getting to know people who are deaf-blind* [Film]. Monmouth, OR: TASH Technical Assistance Project.

Walsh, S., & Holzberg, R. (1981). *Understanding and educating the deaf-blind/severely and profoundly handicapped: An international perspective.* Springfield, IL: Charles C. Thomas.

Writer, J. (1987). A movement-based approach to the education of students who are sensory impaired/multihandicapped. In L. Goetz, D. Guess, & K. Stremel-Campbell (Eds.), *Innovative program design for individuals with dual sensory impairments* (pp. 191-223). Baltimore: Paul H. Brookes.

II. Training Instructions

A. Trainer Preparation

It is recommended that the trainer read the suggested readings and view the recommended videotape prior to the training session. The trainer should be familiar with the outline and content of the module so the presentation is organized and cohesive.

B. How to Deliver the Module

The module is written in outline form to provide a basic framework from which the trainer can deliver the content. The module is designed to be supplemented by a videotape and overhead transparencies as indicated in the appropriate sections. The trainer is encouraged to utilize additional audio-visual materials, such as slides, and to draw from personal experiences when appropriate. Also, participants may provide input based upon their experiences with children and youth who have dual sensory impairments. This module does not include a pre-post evaluation, but does include a participant satisfaction evaluation.

C. Training Tips

Embedded within the text of this module are suggestions for ways in which the trainer can enhance participant attention and learning. These suggestions are typed in bold-faced italics and enclosed in a special bracket. Here is an example.

Pause here and ask participants to share any questions they may have.

III. Content

A. Introduction to the Module

Introduce this session by announcing the title and displaying Overhead 1. Refer to it as you review topics with participants. Next you may want to say, "This session will cover the following topics:

1. ***Description of the population of children and youth with dual sensory and multiple impairments***
2. ***Additional disabilities***
3. ***Factors that influence the effect of vision and hearing impairments on learning***
4. ***Incidence of children and youth with dual sensory and multiple impairments***
5. ***Causes (etiologies) of deaf-blindness***
6. ***Implications of dual sensory and multiple impairments for the development of educational programs***
7. ***History of service delivery to children and youth with dual sensory impairments***
8. ***Resources for services to children and youth with dual sensory and multiple impairments".***

B. Population Description

1. Description of the Population of Children and Youth with Dual Sensory and Multiple Impairments

Very few children and youth identified as deaf-blind are reported as totally blind (e.g., no light perception) and severely hearing impaired (e.g., a greater than 81 dB loss). The majority of children and youth reported as deaf-blind do have some vision or hearing that can be used in daily functioning. Within the Great Lakes Region, the percentages of children and youth with dual sensory impairments who are identified as being totally blind and severely hearing impaired are 7% for Ohio, 7% for Pennsylvania, and 17% for Wisconsin. Typically, a person identified as deaf-blind has one sensory modality that is more intact than the other. Persons who are identified as deaf-blind may be classified into one of five categories that describe their dual sensory impairments. These are:

Display Overhead 2 and refer to it as you review information with participants.

a. visually impaired and hearing impaired with vision being the primary disability

b. visually impaired and hearing impaired with hearing being the primary disability

c. deaf and visually impaired

d. blind and hearing impaired

e. deaf and blind

If participants are copying the information, wait until they have finished before you proceed.

2. Additional Disabilities

Many children and youth identified as deaf-blind are reported to have additional disabling conditions. Within the Great Lakes Region, approximately 94% of the children and youth identified as deaf-blind are reported to have other disabilities as well. The most prevalent additional disabling condition is mental retardation. The presence of additional disabilities and the impact on the learning styles of children should be considered in educational planning efforts. Efforts should address the needs of the whole child.

3. Factors that Influence the Effect of Vision and Hearing Impairments on Learning

The impact that vision and hearing impairments have upon learning depends primarily on two factors. These factors are: a) the severity of hearing loss and visual impairment, and b) age at onset of loss.

Display Overhead 3 as you discuss the following factors.

a. The severity of hearing and visual impairments. Although a child or youth may be identified as deaf-blind, some useful vision or hearing may be present. When vision and hearing are present, it is important for the child to use these sensory skills (e.g., vision and hearing) efficiently. Systematic instruction is usually required to facilitate functional use of vision and hearing.

b. Age at onset of loss. Most people think of Helen Keller when they think of people who are deaf-blind; however, Helen Keller may not be representative of individuals with dual sensory impairments. Helen Keller was born with intact hearing and vision and lost those abilities at a later age. She had the advantage of developing some visual and auditory skills before she lost her vision and hearing. Children who are born with severely impaired vision and hearing do not have the same opportunity to learn through observation and imitation, and they may not respond to and interact with other people in the environment.

4. Incidence of Children and Youth with Dual Sensory and Multiple Impairments

Children and youth who are deaf-blind are identified and reported on an annual basis to the U.S. Department of Education, Office of Special Education Programs by single-state projects or multi-state deaf-blind centers. Children and youth who are deaf-blind are defined as having concomitant vision and hearing impairments resulting from pathology in the auditory and visual systems, or damage to the central nervous system which results in functional deaf-blindness (i.e., students demonstrate impaired responses to visual and auditory stimuli). Efforts have increased in recent years to identify children who function as if they are deaf-blind. Children considered functionally deaf-blind are typically so severely cognitively impaired that their visual and auditory acuity cannot be determined by conventional measures, or the children require adaptations in both auditory and visual input modes to benefit from instruction.

In the 1988-1989 Deaf-Blind[1] count, the Great Lakes Area Regional Center for Deaf-Blind Education reported 255 (.0013%) children and youth with deaf-blindness in Ohio, 128 (.0007%) in Pennsylvania, and 46 (.0007%) in Wisconsin. These incidence figures (in percentages) were obtained by dividing the number of children and youth identified as deaf-blind by the total number of individuals receiving special education services in each of the respective states.

Display Overhead 4 to summarize this information about incidence.
Display Overhead 5 and discuss each etiology listed.

5. Causes (Etiologies) of Deaf-Blindness

Etiologies listed below include only those conditions identified within the Great Lakes Area Regional Center for Deaf-Blind Education. Causes (or etiologies) of deaf-blindness reported were:

a. dysfunction of the central nervous system
b. CHARGE association
c. Usher's Syndrome
d. meningitis or encephalitis
e. congenital (maternal) rubella
f. cytomegalovirus (CMV)
g. various syndromes
h. other unknown etiologies

Additional etiologies associated with deaf-blindness include: syphilis, toxoplasmosis, and herpes simplex virus.

Provide Handout 1 as a resource for further information on etiologies.
Show participants how to use this handout and ask if there are any questions.

---

[1] Registry data from The Great Lakes Area Regional Center for Deaf-Blind Education is provided for a point of reference on the incidence of deaf-blindness.

C. Implications of Dual Sensory and Multiple Impairments for the Development of Educational Programs

1. Medical and Functional Assessments to Evaluate Vision and Hearing

Comprehensive assessment information is important to the development of an appropriate educational program. Medical and functional assessments should be used if a child is suspected of having vision and hearing impairments. Each assessment serves a different function, but the information gathered from the two assessment processes combined provides a comprehensive view of the child's vision and hearing.

a. Medical assessments. Medical assessments provide information about the pathology of the child's vision and auditory deficits. These assessments are typically performed by medically trained otolaryngologists and ophthalmologists who may also recommend interventions (e.g., corrective lenses or hearing aids). Early routine vision and hearing screening is essential for identifying a child's vision and hearing losses. For a child with multiple impairments, standard or conventional assessments become much more difficult to conduct. For a child considered difficult to test, objective techniques such as evoked potential tests (e.g., visual or auditory) may be required.

Provide an example of an evoked potential test (either visual or auditory) if available.

b. Functional assessments. Functional vision and hearing assessments are integral components in planning the educational program for children with dual sensory impairments. Information should be obtained about distance vision, near vision, visual fields, and auditory acuity of children.

The most important outcome of a functional vision or hearing assessment is to determine how well a child uses their residual vision and hearing. The assessment provides insight into appropriate instructional techniques and adaptations that a child may require. After completion of a functional assessment, visual or auditory aids may be introduced to enhance visual and auditory functioning (e.g., desk-mounted magnifier, reading stand, or auditory trainer). Children with multiple disabilities may not use their vision and hearing very efficiently and may benefit from systematic training in this regard.

The videotape, "Within Reach" can be viewed at this time. The videotape includes discussions and demonstrations of teaching strategies, communication needs, and object schedules for teaching students with dual sensory impairments. It features several students with varied skills.

The audience will learn more from this videotape if you prepare them for this section of the presentation. You can do so in the following ways:

1. ***Tell them how long it is.***
2. ***Give them "advance organizers." Describe the video and give them something specific to find.***
3. ***Provide them with a notetaking guide.***
4. ***Prepare at least two questions for a follow-up discussion.***

The audience may enjoy a 10 minute break after viewing the videotape and participating in a discussion.

2. Instructional Strategies

The development of a functional program for children and youth with dual sensory and multiple impairments should follow many of the best practice guidelines for children with severe disabilities. Characteristics of best practices apply to all aspects of service delivery. These characteristics include:

Display Overhead 6. Discuss each item briefly and emphasize why each is important.

a. a focus on functional skills

b. the use of age-appropriate materials

c. maximum integration with nondisabled peers

d. community-based instruction

e. the use of nonaversive behavior management strategies, if necessary

f. parent involvement, and

g. systematic, planned transition from school to adult environments

Limitations in the ability to organize and synthesize information through visual and auditory senses are primary characteristics affecting learning and development of children with dual sensory impairments. Since typical instructional strategies make use of visual and auditory stimuli, it may be necessary to modify instruction to meet the needs of children and youth who have dual sensory impairments.

Display Overhead 7 and refer to it as each adaptation strategy is presented.

a. Increasing discrimination ability for figure/ground differences. Many children and youth with dual sensory and multiple impairments have some residual hearing or vision. These children require functional vision or hearing training within meaningful activities and can benefit from increased visual or auditory input that may assist in the discrimination of appropriate cues from irrelevant background stimuli.

b. Tactile teaching. Tactile teaching requires the use of objects, tactile cues, and environmental cues that provide information rather than serve to emphasize typical visual and auditory cues. Touch provides children with considerable information, however it is only a "near" sense (i.e., no "distance" information can be obtained with tactile input).

Provide an example of tactile teaching.

c. Use of other senses. Development of the effective use of olfactory (i.e., smell) and gustatory (i. e., taste) stimuli should be taught based on behavioral principles rather than through passive stimulation. These senses provide valuable cues about activities and events that occur in home, school, and community environments of children.

Provide an example of teaching through other senses.

d. Selecting appropriate activities. Certain activities have little function for students with dual sensory impairments because they rely on visual and auditory input. The reinforcing qualities of activities should be analyzed to avoid the selection of those activities that children are unlikely to engage in as adults. Typical classroom and home routines should be analyzed for elements that provide movement (e.g., vestibular stimulation), interesting physical contact (e.g., touch), and other sensory input (e.g., gustatory and olfactory). As many of these elements should be incorporated into the instructional paradigm as appropriate.

Provide an example of an instructional activity that includes reinforcing qualities appropriate for a student with dual sensory and multiple impairments.

Children and youth with dual sensory and multiple impairments should be taught to participate in functional activities within natural environments. The limited visual and auditory information that children receive from environments require that teachers provide additional information through other sense modalities (e. g., primarily touch). All training activities should focus on skills that are critical for children to learn.

D. History of Service Delivery to Children and Youth with Dual Sensory and Multiple Impairments

Prior to the large-scale rubella epidemic of 1964-1965, services to children and youth who were deaf-blind were minimal. The first educational program for a child who was deaf-blind was at Perkins School for the Blind, Watertown, Massachusetts. Later, residential programs were developed in several locations across the country. Approximately eight specialized programs for children who were deaf-blind were established in institutions, but the majority of children and youth with dual sensory impairments were not served or educated on a systematic basis.

The rubella epidemic of 1964-1965 created the need to educate approximately 2,500 children with deaf-blindness. In 1968, the Federal Bureau of Education for The Handicapped (now the Office of Special Education Programs) established 16 regional deaf-blind centers that were primarily responsible for providing educational and special services to this population. In 1978, federal monies allocated for children and youth with deaf-blindness became available to single states (i.e., states could receive monies for children with deaf-blindness directly rather than through multi-state regional centers).

In 1975, Public Law 94-142 was signed. This law was passed to guarantee a free and appropriate education for all children, regardless of their disabling condition. The combination of multi-state regional centers, single-state programs, and Public Law 94-142 have resulted in a range of placement options for children with dual sensory and multiple impairments.

E. Resources for Services to Children and Youth with Dual Sensory and Multiple Impairments

1. Multi-State Regional Centers and Single-State Programs

   Multi-State Regional Centers and Single-State Programs for children and youth with deaf-blindness are designed to provide the following:

   a. special education and related services, as well as vocational and transitional services to children and youth with deaf-blindness to whom states are not obligated to make available a free appropriate public education (e. g., children who are not yet school age)

Distribute Handout 2. Refer to it as you review single-state projects and multi-state centers with participants.

b. technical assistance to state educational agencies in building their capacity to serve children and youth with deaf-blindness

2. Technical Assistance Projects and Centers

Technical assistance projects and centers are designed to provide information, training, and technical assistance activities to individuals with dual sensory and multiple impairments, as well as their families who live in the United States and territories.

a. Teaching Research Assistance to Children and Youth Experiencing Sensory Impairments (TRACES). TRACES (formerly the TASH Technical Assistance Project) is a federally-funded project designed to provide technical assistance to single-state projects and multi-state centers that provide services to children and youth with dual sensory impairments. The project operates through one central and three regional offices. Services provided by each regional office include:

Display Overhead 8 and refer to it as each service is reviewed.

i. state system change (e. g., planning and implementation)
ii. inservice training
iii. on- or off-site consultation
iv. direct training for staff, parents, and administrators
v. information and materials search
vi. materials review and development
vii. identification of "best practice" training sites and activities

b. The Helen Keller Technical Assistance Center (HKNC-TAC). HKNC-TAC provides technical assistance to state education and other agencies to facilitate the transition of young adults with deaf-blindness, upon reaching the age of 22, from education to employment and other post-school services. Personnel from HKNC-TAC also provide inservice training to service providers and parents on the delivery of transition services to young adults with deaf-blindness.

Distribute Handout 3 and refer to it as you describe centers and projects.

IV. Sources for Additional Information

Bullis, M., & Bull, B. (1986). *Review of research on adolescents and adults with deaf-blindness.* Silver Springs, MD: The Catholic University National Rehabilitation Information Center.

Publisher's address: The Catholic University National Rehabilitation Center
8455 Colesville Road, Suite 935
Silver Springs, MD 20910
Phone number: (800) 346-2742
Cost of Book: $5.00 (order #R39)

Fredericks, H. D., & Baldwin, V. (1987). Individuals with sensory impairments: Who are they? How are they educated? In L. Goetz, D. Guess, & K. Stremel-Campbell (Eds.), *Innovative program design for individuals with dual sensory impairments* (pp. 3-12). Baltimore: Paul H. Brookes.

Publisher's address: Paul H. Brookes Publishing Company
P.O. Box 10624
Baltimore, MD 21285-0624
Phone number: (800) 638-3775
Cost of Book: $29.95

McInnis, J., & Treffry, J. (1982). *Deaf-blind infants and children: A developmental guide.* Toronto: University of Toronto Press.

Publisher's address: University of Toronto Press
63 A St. George Street
2nd Floor
Order Department
Toronto, Ontario, Canada M5S-1A6
Phone number: (416) 667-7791
Cost of Book: $27.50

Orelove, F. P., & Sobsey, D. (1987). *Educating children with multiple disabilities: A transdisciplinary approach.* Baltimore: Paul H. Brookes.

Publisher's address: Paul H. Brookes Publishing Company
P.O. Box 10624
Baltimore, MD 21285-0624

Phone number: (800) 638-3775

Cost of Book: $28.00

Teaching Research. (Producers). (1987). *Within reach: Getting to know people who are deaf-blind* [Videotape]. Monmouth, OR: Teaching Research.

Publisher's address: Teaching Research Publications
345 North Monmouth Avenue
Monmouth, OR 97361

Phone number: (503) 838-8817

Cost of Videotape: $10.00

Walsh, S., & Holzberg, R. (1981). *Understanding and educating the deaf-blind/severely and profoundly handicapped: An international perspective.* Springfield, IL: Charles C. Thomas.

Publisher's address: Charles C. Thomas Publishing Company
2600 South 1st Street
Springfield, IL 62794-9265

Phone number: (217) 789-8980

Cost of Book: $34.00

V. Evaluation Measure

A. Participant Satisfaction Evaluation

A Series of Training Modules
on Educating Children and Youth
with Dual-Sensory and Multiple Impairments

Participant Evaluation of Training

Introduction to the Population of Children and Youth with Dual Sensory and Multiple Impairments: Parent and Service Provider Training Module

Trainer: ______________________ Date of Training: ______________________

Training Site: ____

Please read each of the following statements carefully and rate each statement using the following key:

1 = Strongly Disagree	(SD)	4 = Agree	(A)
2 = Disagree	(D)	5 = Strongly Agree	(SA)
3 = Undecided	(U)		

		(SD)	(D)	(U)	(A)	(SA)
1.	Overall, the content of this training met my expectations.	1	2	3	4	5
2.	I learned useful information about the heterogeneity and incidence of children and youth identified with dual sensory and multiple impairments as a result of this training.	1	2	3	4	5
3.	I learned useful information about implications for educational programs for children and youth with dual sensory and multiple impairments as a result of this training.	1	2	3	4	5
4.	I learned useful information about the history of service delivery and resources for services to children and youth with dual sensory and multiple impairments as a result of this training.	1	2	3	4	5
5.	The training provided specific information that I can apply.	1	2	3	4	5
6.	The training content was applicable to my needs as a parent, family member, administrator, or service provider.	1	2	3	4	5
7.	Materials available from this training were relevant and beneficial.	1	2	3	4	5

8. What were the strengths of this training?

9. What follow-up needs can you identify for yourself?

10. In what ways could these training activities have been improved?

Appendix A

Overhead Transparencies

CONTENT OUTLINE

1. Description of the Population of Children and Youth with Dual Sensory and Multiple Impairments
2. Additional Disabilities
3. Factors that Influence the Effect of Vision and Hearing Impairments on Learning
4. Incidence of Children and Youth with Dual Sensory Impairments
5. Causes (Etiologies) of Deaf-Blindness
6. Implications of Dual Sensory and Multiple Impairments for the Development of Educational Programs
7. History of Service Delivery to Children and Youth with Dual Sensory Impairments
8. Resources for Services to Children and Youth with Dual Sensory and Multiple Impairments

(Overhead 1)

CATEGORIES OF VISION AND HEARING IMPAIRMENTS

1. Visually impaired and hearing impaired with vision being the primary disability

2. Visually impaired and hearing impaired with hearing being the primary disability

3. Deaf and visually impaired

4. Blind and hearing impaired

5. Deaf and Blind

From: Roberts, S., Helmstetter, E., Guess, D., Murphy-Herd, M., & Mulligan, M. (1984). *Programming for students who are deaf and blind.* Lawrence: University of Kansas, Department of Special Education.

(Overhead 2)

FACTORS THAT INFLUENCE THE EFFECT OF VISION AND HEARING IMPAIRMENTS ON LEARNING

1. Severity of the impairment

2. Age at onset of loss

(Overhead 3)

REPORTED INCIDENCE OF CHILDREN AND YOUTH WITH DEAF-BLINDNESS

Ohio	255	(.0013%)
Pennsylvania	128	(.0007%)
Wisconsin	46	(.0007%)

From Great Lakes Area Regional Center for Deaf-Blind Education, 1989-90.

(Overhead 4)

CAUSES (OR ETIOLOGIES) OF DEAF-BLINDNESS

- Dysfunction of the Central Nervous System
- CHARGE Association
- Usher's Syndrome
- Meningitis or Encephalitis
- Rubella
- Cytomegalovirus (CMV)
- Various Syndromes
- Other Unknown Etiologies

NOTE The etiologies listed above were identified by child count personnel from the states included in the Great Lakes Area Regional Center for Deaf-Blind Education.

(Overhead 5)

CHARACTERISTICS OF BEST PRACTICES

1. A focus on functional skills
2. The use of age-appropriate materials
3. Maximum integration with nondisabled peers
4. Community-based instruction
5. The use of nonaversive behavior management strategies, if necessary
6. Parent involvement
7. Systematic, planned transition from school to adult environments

(Overhead 6)

ADAPTING FOR SENSORY LOSSES

1. Increasing discrimination ability in figure/ground differences

2. Tactile teaching

3. Use of other senses

4. Selecting appropriate activities

(Overhead 7)

SERVICES PROVIDED BY TRACES (FORMERLY THE TASH TECHNICAL ASSISTANCE PROJECT)

1. State system change (e. g., planning and implementation)
2. Inservice training
3. On- or off-site consultation
4. Direct training for staff and administrators
5. Information and materials search
6. Materials review and development
7. Identification of "best practice" training sites and activities

(Overhead 8)

Appendix B

Handouts

Etiologies of Deaf-Blindness
Syndromes

Etiology	Cause/ Incidence	Manifestations		
		Vision	Hearing	Other
CHARGE Association	Unknown	**C** for coloboma: lesion on the eye which can impair vision depending on location; present in 75% of people	**E** for ear anomalies/ deafness: mild to profound mixed loss bilaterally; chronic otitis media	**H** for heart disease; **A** for atresia: if bilateral-severe respiratory distress; if unilateral-constant nasal discharge; **R** for retarded growth: mild to severe mental retardation; **G** for genital hypoplasia: genital abnormalities in males
Usher's Syndrome	Genetic 1:20,000 people, 3-6% children born with hearing impairments have Usher's Syndrome; Types I-IV classifications are based upon the degree of sensory loss and cognitive functioning; accounts for 50% of deaf-blindness	Night blindness usually first symptom of retinitis pigmentosa, can occur as early as preschool; visual loss often not noticed until late childhood or adolescence	First symptom that is diagnosed; severe to moderately severe sensorineural loss; bilateral; greater loss in higher frequencies	

Etiologies of Deaf-Blindness
Congenital Infections

Etiology	Cause/ Incidence	Manifestations		
		Vision	Hearing	Other
Congenital Rubella	Mothers infected in first 6 weeks of pregnancy have babies with 2 or 3 of the following characteristics: cataracts, deafness, severe to clinically unapparent heart disease	Congenital cataracts are common, occur in 20-70% infants; pigmentary retinopathy; strabismus; glaucoma	Mild to profound sensorineural loss, unilateral or bilateral; audiograms-"belly-like" curves with greatest loss at 1,000 hz	Cardiac defects; microencephaly; meningo-encephalitis
Cytomegalo-virus, (CMV)	Asymptomatic infection	Blindness at birth, or progressive inflammation of eyes which can lead to blindness	Deafness	Microencephaly; seizures; mental retardation
Syphilis	Intrauterine infection or acquired during birth with contact of lesions in birth canal	Blindness at birth, or progressive inflammation of eyes which can lead to blindness	Deafness	Anemia; bone inflammation; mental retardation; skeletal anomalies; dental abnormalities
Toxoplasmosis	Parasite in raw meat or kitty litter; in pregnancy, parasite can cross placenta to fetus	Blindness at birth, or progressive inflammation of eyes which can lead to blindness	Deafness	Microencephaly; seizures; mental retardation
Herpes	Intrauterine infection contracted during passage through the birth canal of infected mother; .03 to .3 per thousand births	Disease of the retina, or moderate to severe visual impairment	Deafness at birth, or mild to profound hearing impairment	Microencephaly; encephalitis; seizures; mental retardation; central nervous system damage; periodic herpes skin rash

U.S. Department of Education
Office of Special Education Programs
Services for Children and Youth with Deaf-Blindness

Multi-State Projects

These projects provide the following: (a) special education and related vocational, and transitional services to children and youth with dual sensory impairments to whom states are not obligated to make available a free appropriate public education under Part B of the Education of the Handicapped Act, and to whom the state is not providing those services under some other authority; and (b) technical assistance to state educational agencies to build the capacity to serve this population.

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(Handout 3)

FUNCTIONAL CURRICULUM DEVELOPMENT AND IMPLEMENTATION

Service Provider Training Module

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1990

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I. General Information-Overview

A. Service Provider Training Module

Functional Curriculum Development and Implementation

B. Purpose of the Module

The purpose of this module is to assist teachers and service providers in developing and implementing a functional program for students with dual sensory and multiple impairments. Information and activities presented in this module address components of a functional program, the process of curriculum development, and additional factors to consider when implementing a functional curriculum.

C. Intended Audience

The module is intended for persons who provide educational services to students with dual sensory and multiple impairments, such as educators, occupational therapists, physical therapists, speech and language therapists, and orientation and mobility instructors. It is intended to be used with those individuals who have received undergraduate or graduate level training in education, special education, or related services.

D. Levels of Training

Awareness and Knowledge/Skill Acquisition

E. Entry Level Skills or Prerequisites

Participants should be familiar with instructional techniques and have a strong background in various educational philosophies and practices. Furthermore, participants should have previous work experience with students who have dual sensory and multiple impairments.

F. General Outcome Competencies

Participants will become aware of the following:

1. the difference between developmental and functional curriculum models
2. the components of a functional curriculum
3. assessment strategies used with students who have dual sensory and multiple impairments
4. the process used when implementing a functional curriculum
5. additional programmatic considerations when implementing a functional curriculum

G. Module Delivery Organization

1. Number of Lectures: 4
2. Amount of Time: One to two hours per lecture plus additional time for conducting training activities and discussion. Overall time estimates for the presentation of this module range from one to one-and-one-half days.
3. Materials and Equipment: Although specific examples and copies of overhead transparencies are provided, the trainer is encouraged to utilize a variety of additional materials (e.g., videotapes, additional overhead transparencies, handouts, or slides).

H. Special Instructions

The trainer should be sensitive to terminology used when describing persons with disabling conditions by referring to the person first and the disability second. For example, the phrase "a student with dual sensory and multiple impairments" should be used instead of "a severely handicapped, deaf-blind student."

FUNCTIONAL CURRICULUM DEVELOPMENT AND IMPLEMENTATION

Service Provider Training Module

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1990

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I. General Information-Overview

A. Service Provider Training Module

Functional Curriculum Development and Implementation

B. Purpose of the Module

The purpose of this module is to assist teachers and service providers in developing and implementing a functional program for students with dual sensory and multiple impairments. Information and activities presented in this module address components of a functional program, the process of curriculum development, and additional factors to consider when implementing a functional curriculum.

C. Intended Audience

The module is intended for persons who provide educational services to students with dual sensory and multiple impairments, such as educators, occupational therapists, physical therapists, speech and language therapists, and orientation and mobility instructors. It is intended to be used with those individuals who have received undergraduate or graduate level training in education, special education, or related services.

D. Levels of Training

Awareness and Knowledge/Skill Acquisition

E. Entry Level Skills or Prerequisites

Participants should be familiar with instructional techniques and have a strong background in various educational philosophies and practices. Furthermore, participants should have previous work experience with students who have dual sensory and multiple impairments.

F. General Outcome Competencies

Participants will become aware of the following:

1. the difference between developmental and functional curriculum models
2. the components of a functional curriculum
3. assessment strategies used with students who have dual sensory and multiple impairments
4. the process used when implementing a functional curriculum
5. additional programmatic considerations when implementing a functional curriculum

G. Module Delivery Organization

1. Number of Lectures: 4
2. Amount of Time: One to two hours per lecture plus additional time for conducting training activities and discussion. Overall time estimates for the presentation of this module range from one to one-and-one-half days.
3. Materials and Equipment: Although specific examples and copies of overhead transparencies are provided, the trainer is encouraged to utilize a variety of additional materials (e.g., videotapes, additional overhead transparencies, handouts, or slides).

H. Special Instructions

The trainer should be sensitive to terminology used when describing persons with disabling conditions by referring to the person first and the disability second. For example, the phrase "a student with dual sensory and multiple impairments" should be used instead of "a severely handicapped, deaf-blind student."

II. Training Instructions

A. Trainer Preparation

The trainer should have knowledge of the functional curriculum process along with an awareness of current best educational practices for students with dual sensory and multiple impairments. In addition, the trainer should be familiar with the suggested readings and materials prior to the presentation of this module.

B. How to Deliver the Module

It is recommended that presentations include lectures, training activities, and discussion. Suggested training activities are listed under each content section. Trainers are encouraged to develop and use original resources to supplement their presentations.

C. Training Tips

Embedded within the text of the module are suggestions for ways in which the trainer can enhance participant attention and learning. These suggestions are typed in bold-faced italics and enclosed in a special bracket. Here is an example.

Pause here and ask participants to share any questions they may have.

III. Content-Part I: Curricular Models

A. Module Delivery Organization

1. Lecture Number: 1

2. Amount of Time: One hour

3. Specific Outcome Competencies

   Participants will be able to:

   a. describe the characteristics of a developmental curriculum model

   b. identify the benefits and limitations of a developmental curriculum model

   c. describe the characteristics of a functional curriculum model

   d. identify the benefits and limitations of a functional curriculum model

   e. give examples of applying both developmental and functional curricula

B. Content Overview Outline

1. Characteristics of a Developmental Curriculum Model

2. Benefits and Limitations of a Developmental Curriculum Model

3. Characteristics of a Functional Curriculum Model

4. Benefits and Limitations of a Functional Curriculum Model

C. Suggested Readings for the Trainer

Sections of the content in the readings listed below served as a basis for the development of this module. The trainer should obtain these resources and master their content prior to delivering the module.

Bates, P., Morrow, S., Pancsofar, E., & Sedlak, R. (1984). The effect of functional vs. nonfunctional activities on attitudes/expectations of nonhandicapped college students: What they see is what we get. *Journal of the Association for Persons with Severe Handicaps, 9,* 73-78.

Brown, F. (1987). Meaningful assessment of people with profound and severe handicaps. In M. E. Snell (Ed.), *Systematic instruction of persons with severe handicaps (3rd ed.)* (pp. 39-63). Columbus, OH: Charles E. Merrill.

Ford, A., Schnorr, R., Meyer, L., Davern, L., Black, J., & Dempsey, P. (1989). *The Syracuse community-referenced curriculum guide for students with moderate and severe disabilities.* Baltimore: Paul H. Brookes.

Gaylord-Ross, R., Stremel-Campbell, K., & Storey, K. (1986). Social skills training in natural contexts. In R. Horner, L. Meyer, & H. D. Fredericks (Eds.), *Education of learners with severe handicaps: Exemplary service strategies* (pp. 161-187). Baltimore: Paul H. Brookes.

Mirenda, P., & Donnellan, A. M. (1987). Issues in curriculum development. In D. J. Cohen & A. M. Donnellan (Eds.), *Handbook of autism and pervasive developmental disorders* (pp. 211-226). New York: John Wiley & Sons.

Orelove, F. P., & Sobsey, D. (1987). *Educating children with multiple disabilities: A transdisciplinary approach.* Baltimore: Paul H. Brookes.

Snell, M. E., & Griggs, N. C. (1987). Instructional assessment and curriculum development. In M. E. Snell (Ed.), *Systematic instruction for persons with severe handicaps (3rd ed.)* (pp. 64-106). Columbus, OH: Charles E. Merrill.

Wehman, P., & Hill, J. (1982). Preparing severely handicapped youth for less restrictive environments. *Journal of the Association for Persons with Severe Handicaps, 7,* 33-39.

WETA. (Producers). (1987). *Regular lives* [Videotape]. Washington, DC: WETA Educational Activities.

D. Introduction to the Content, Part I

Introduce this session by announcing the title and displaying Overhead 1. Refer to it as you review topics with participants. Next, you may say, "This session will cover descriptions of two curricular models. Topics included in this session are:

1. ***Characteristics of a developmental curriculum model***
2. ***Benefits and limitations of a developmental curriculum model***
3. ***Characteristics of a functional curriculum model***
4. ***Benefits and limitations of a functional curriculum model"***

E. Specific Content

Distribute Handout 1. Have participants refer to it throughout the session.

1. Characteristics of a Developmental Curriculum Model

A developmental curriculum model is based on the growth and developmental sequences of nondisabled children. Proponents of this approach support the belief that sequences used to measure a nondisabled child's development should be used to guide development for a child with dual sensory and multiple disabilities. Their belief is based on three underlying assumptions. These assumptions are:

a. Developmental growth of a nondisabled child provides the most logical order of skills within age ranges.

b. Many of the skills listed in developmental sequences are prerequisite skills.

c. Acquisition skills identified for nondisabled children can be used as measures for students with disabilities who are functioning at the same developmental level (Brown, 1987).

Display Overhead 2 and refer to it as you list developmental skill areas.

Curriculum content is determined by norm-referenced assessments, informal checklists, or assessments adapted for students with disabilities. Developmental levels of students are usually determined across broad domains, such as gross and fine motor, communication, cognitive, self-help, pre-academic/academic, sensory (e.g., vision and hearing), social/emotional, and pre-vocational/vocational. Items missed in each domain are targeted for instruction and written in the form of goals and objectives on the individual education plans (IEP's) of students.

2. Benefits and Limitations of a Developmental Curriculum Model

Display Overhead 3 and refer to it as you review benefits with participants.

a. Benefits

i. A developmental curriculum often is written in observable terms; therefore, the presence or absence of skills can be easily determined (Brown, 1987).

ii. Assessment results can depict a global picture of the student's abilities and needs which can assist the educator in selection of additional evaluation instruments.

iii. Student progress can be measured by systematic and periodic administration of the evaluation instrument.

iv. The assessment instrument that accompanies the curriculum is used as a guide when deciding the next skill to teach.

v. Curriculum guides can be used to compare early development, especially for infants and toddlers (Orelove & Sobsey, 1987).

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At this point, you might pause and request input from the audience. Ask them what they think would be some limitations of a developmental curriculum model. List their responses on a blank overhead transparency, chalk board, or flip chart.

Display Overhead 4 and refer to it as you review limitations with participants.

b. Limitations

i. Information gathered from developmental assessments (i.e., pertaining to the student's abilities and needs) frequently results in teaching isolated skills which are not useful or meaningful to students as they function in current environments.

ii. Application of developmental sequences frequently results in decisions to teach earlier skills which are viewed as prerequisites to later stages of development. Often, older students never move past the "pre" stage (Mirenda & Donnellan, 1987). This viewpoint may influence educators to provide instruction on skills that are not age-appropriate or meaningful (Brown, 1987).

iii. Children with dual sensory and multiple impairments usually do not demonstrate the same growth or developmental progression as their nondisabled peers. Skills targeted for instruction may never be learned, making it difficult for students to progress to the next level.

iv. Developmental instruments are written to evaluate the form of behavior rather than the function (Orelove & Sobsey, 1987).

v. It is a "bottom-up" rather than a "top-down" curriculum model (Orelove & Sobsey, 1987).

3. Characteristics of a Functional Curriculum Model

Display Overhead 5 as you describe characteristics of a functional curriculum model.

A functional curriculum model is designed to determine priority skills that students need in order to function in current and future environments. Priority skills are characterized as functional, meaningful, chronologically age-appropriate, reflecting the impact of transition to the next environment, and are relevant to performance in integrated settings.

Display Overhead 6 as you describe adult life areas to participants.

Priority skills targeted for instruction are taught in adult life areas of independent living, work, community life, regular education, and recreation/leisure. Skills, such as communication, motor, cognitive, and social/emotional are taught across adult life areas and in integrated sequences.

Development of a functional curriculum is based on the principle of partial participation (Baumgart, Brown, Pumpian, Nisbet, Ford, Sweet, Messina, & Schroeder, 1982). The principle of partial participation is designed to enable all students with disabilities, regardless of the severity of their disabling conditions, to participate in all or part of instructional activities and skill sequences.

An ecological assessment is conducted to determine environments, subenvironments, activities, instructional goals, and adaptations. The abilities and needs of students are assessed in terms of discrepancy analyses. The analyses are designed to identify the discrepancy between critical skills listed on inventories and the students' abilities to perform those skills. Target skills and adaptations needed for student performance are identified as a result of the analyses.

4. Benefits and Limitations of a Functional Curriculum Model

Display Overhead 7. Ask for participant input as you discuss the benefits of a functional curriculum model.

a. Benefits

i. A functional curriculum model provides opportunities for students to generalize and transfer skills from one environment to the next as skills are taught in natural sequences and integrated settings.

ii. Chronologically age-appropriate skills and materials are utilized so students can learn to participate in routines and settings with their nondisabled peers.

iii. A functional curriculum model provides opportunities to teach and practice therapeutic goals contributed by related services personnel in meaningful contexts.

iv. Instructional content is not pre-determined. Activities that occur in each of the five life areas determine selection of skills for instruction. Instruction should occur in natural settings.

v. A functional curriculum model can serve as a safeguard against teaching "readiness" skills. Skills targeted for instruction should be future oriented.

vi. It is designed to eliminate instruction of splinter skills (Orelove & Sobsey, 1987).

Display Overhead 8 for this portion of the discussion.

b. Limitations

i. The functional curriculum process is very time consuming, especially for staff who do not have experience in utilizing this approach.

ii. It does not provide instructions or guidelines for deciding what to teach out of the many skills identified (Orelove & Sobsey, 1987).

iii. Some early attempts to implement this model failed to include developmental information in the design of instructional strategies. This has resulted in the selection of skills for instruction which were beyond or below the student's cognitive motor, sensory, and communication levels (Miranda & Donnellan, 1987).

To conclude, ask participants for their personal reactions to this content.

F. Training Activities

The following activities provide participants with an excellent opportunity to respond to the content, as well as to communicate with each other.

1. Ask participants to provide examples of activities that may be part of a functional curricular program for students with dual sensory and multiple impairments at elementary-age levels and at secondary-age levels.

2. Show the videotape, "Mainstreaming the Severely Handicapped." Have participants discuss their feelings about information they have learned.

3. Have participants critique the following vignette to arrive at a more functional program. Participants should analyze activities and materials, and generate examples of instruction on Jane's skills using chronologically age-appropriate materials during activities that typically occur in a regular education environment. List their comments on a blank overhead transparency.

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Discuss each entry as a large group.

Jane is 13 years old, with severe mental retardation and moderate cerebral palsy that requires her to use a wheelchair for travel. Jane has a profound sensorineural hearing loss, bilaterally. She also has a peripheral vision loss. Jane attends a self-contained classroom in an elementary school. Jane's school schedule consists of going to the computer lab with her class, art, adaptive PE, and recess. Skill instruction has consisted of activities and materials such as assembling and disassembling nuts and bolts, matching Peabody picture cards with objects they represent, and a variety of fine motor skill activities, such as putting paper clips in coffee cans, lacing shoes, and following a bead pattern.

IV. Content-Part II: Components of a Functional Curriculum

A. Module Delivery Organization

1. Lecture Number: 2

2. Amount of Time: Ninety minutes

3. Specific Outcome Competencies

   Participants will be able to describe nine components of a functional curriculum model.

B. Content Overview Outline

1. Life Areas

2. Chronologically Age-Appropriate Skills and Materials

3. Functional and Meaningful Skills

4. Parent or Caregiver Preferences

5. Student Preferences and Choices

6. Instruction in Natural Environments

7. Partial Participation

8. Integration with Nondisabled Peers

9. Transdisciplinary Involvement

C. Suggested Readings for the Trainer

Baumgart, D., Brown, L., Pumpian, I., Nisbet, J., Ford, A., Sweet, M., Messina, R., & Schroeder, J. (1982). Principle of partial participation and individualized adaptations in educational programs for severely handicapped students. *The Journal of the Association for the Severely Handicapped, 7,* 17-27.

Brown, L. (1979, November). Education for living. In E. Elkin (Chair), *The child with retardation today-the adult of tomorrow.* A symposium commemorating the International Year of the Child, San Juan.

Brown, L., Branston, M. B., Hamre-Nietupski, S., Pumpian, I., Certo, N., & Gruenwald, L. (1979). A strategy for developing chronological age-appropriate and functional curricular content for severely handicapped adolescents and young adults. *The Journal of Special Education, 13* (1), 81-90.

Falvey, M. (1986). *Community-based curriculum: Instructional strategies for students with severe handicaps.* Baltimore: Paul H. Brookes.

Freagon, S., Wheeler, F., Brankin, G., McDaniel, K., Costello, D., & Peters, W. (1983). *Curricular processes for the school and community integration of severely handicapped students ages 6-21: Project replication guide.* DeKalb: Northern Illinois University-DeKalb & DeKalb County Special Education Association.

Gaylord-Ross, R. (Ed.). (1989). *Integration strategies for students with severe handicaps.* Baltimore: Paul H. Brookes.

Gaylord-Ross, R. J., & Holvoet, J. F. (Eds.).(1985). Making the curriculum natural and functional. *Strategies for educating students with severe handicaps* (pp. 89-124). Boston: Little, Brown, & Company.

Goetz, L., Guess, D., & Gee, K. (Eds.). (1987). *Innovative program design for individuals with dual sensory impairments.* Baltimore: Paul H. Brookes.

Holovach, K. (1987). *Teaching that works: The individualized critical skills model.* Oakland, CA: Special Education Resource Network.

Mirenda, P. (Speaker)., & Kansas State Department of Education (Director/Producer). (1987).

Independent living skills in community-based instruction for students with severe multiple handicaps and deaf-blindness [Videotape]. Emporia, KS: Innovative Communications, Inc.

Orelove, F. P., & Sobsey, D. (1987). Curriculum and instructional programming. *Educating children with multiple disabilities: A transdisciplinary approach* (pp. 157-181). Baltimore: Paul H. Brookes.

Sailor, W., Halverson, A., Anderson, J., Goetz, L., Gee, K., Doering, K., & Hunt, P. (1986). Community intensive instruction. In R. Horner, L. Meyers, & H. D. Fredericks (Eds.), *Education of learners with severe handicaps: Exemplary service strategies* (pp. 251-288). Baltimore: Paul H. Brookes.

Turnbull, A. P., Brotherson, M. J., Bronicki, G. J., Benson, H. A., Houghton, J., Summers, J. A., & Roeder-Gordon, C. (1985). *Parent inventory of current and future environments.* Lawrence: University of Kansas, Affiliated Facility, Bureau of Child Research.

Turnbull, H. R., Turnbull, A. P., Bronicki, G. J., Summers, J.A., & Roeder-Gordon, C. (1989). *Disability and the family: A guide to decisions for adulthood.* Baltimore: Paul H. Brookes.

Wilcox, B. (1989, May). *Activity-based curriculum.* Paper presented at the Southeast Regional Resource Center Conference, Grantville, PA.

D. Introduction to the Content, Part II

Introduce this session by announcing the title and displaying Overhead 9. Refer to it as you review topics with participants. Next, you may say, "This session will provide a description of each of the nine components of a functional curriculum model. Each component is incorporated into a student's education program. These components are:

1. ***Life areas***
2. ***Chronologically age-appropriate skills and materials***
3. ***Functional and meaningful skills***
4. ***Parent or caregiver preferences***
5. ***Student preferences and choices***
6. ***Instruction in natural environments***
7. ***Partial participation***
8. ***Integration with nondisabled peers***
9. ***Transdisciplinary involvement"***

E. Specific Content

1. Life Areas

Display Overhead 10 as you discuss five different life areas.

All persons, regardless of their age, participate in each of the following life areas. However, the type of activities and amount of time spent teaching students in each life area is based on their ages.

a. Independent living (Domestic). The independent living life area includes those environments where personal and domestic activities are typically performed. Environments considered appropriate for independent living instruction include the student's home, staff homes, a group home, or supported apartment setting. Activities associated with independent living are often referred to as self-help, life, or daily living. Skill sequences, such as dressing, eating, toileting, food preparation, laundry, or vacuuming are selected for instruction.

b. Work. The life area of work includes those environments where people perform a job. Social behavior, such as staying on-task or socializing during break are included as well. Environments considered appropriate for the work life area are any locations where jobs are performed by nondisabled co-workers. Work activities may include folding brochures at an office, putting together high-chair trays at fast food restaurants, or stamping "confidential" on files at a hospital. Opportunities and types of jobs in community settings are plentiful.

c. Recreation/leisure. The recreation/leisure life area includes those environments in which an individual functions during free time. Activities may involve either active participation, such as score keeping during a bowling tournament by activating a switch which controls the scoreboard, or passive participation, such as being a spectator at sporting, theatrical,

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or music events. Other activities may include playing computer games at video arcades, participating in a low impact aerobics class, or activating a switch to turn on a record player or radio.

d. Community life. The community life area includes those environments typical of a neighborhood. Activities may include depositing a check at a bank, eating in a restaurant, grocery shopping at a supermarket, or going to a dentist appointment. Locations considered appropriate for conducting instruction in the community life area include any setting which is accessed by a nondisabled peer or members of the student's family.

e. Regular education. The regular education life area includes those locations in regular education settings frequented by nondisabled peers. Examples of activities conducted in regular school environments include greeting a friend in homeroom, learning coin exchange in a third grade math class, or participating in extracurricular activities with classmates.

At this point, you may want to involve participants in some focused discussion. They could generate five functional activities in each of the areas presented. Participants might want to divide into small groups according to the ages of the children whom they serve.

2. Chronologically Age-appropriate Skills and Materials

Skills and materials used in a functional curriculum should reflect the student's chronological rather than developmental age. Frequently, students with dual sensory and multiple impairments are given materials or participate in activities that are appropriate for a child whose chronological age is much younger. Additionally, classroom decor may require modification as well. For example, appropriate classroom decor and leisure activities for 15 year-old students include posters of rock stars, listening to classical jazz, and looking at magazines. Providing opportunities for students to participate in age-appropriate activities may help encourage interactions with nondisabled peers.

3. Functional and Meaningful Skills

Display Overhead 11 and refer to it while you present the following information.

Activities and skills selected for instruction should be functional and meaningful to the student. To determine if a skill is functional and meaningful, two questions should be asked. First, "If the student is not able to perform the skill is it important enough to have someone perform it for her?" (Brown, L., Branston, M. B., Hamre-Nietupski, S., Pumpian, I., Certo, N., & Gruenwald, L., 1979). For example, if the student is not able to brush her teeth, will someone have to do it for her? Or, if the student is not able to sort red, yellow, and blue bears into butter tubs, is it important enough to have someone else do it for him? If the answer is yes, the skill is probably functional. Another question to ask in order to determine whether or not a skill is functional is, "Can you see yourself performing the skill in everyday life?" (Wilcox, 1989). For example, can you see yourself labeling kitchen utensils? If the answer is yes, the skill is probably functional.

4. Parent or Caregiver Preferences

Consider that some participants may be parents as you discuss this section.

Parents and caregivers are important members of the educational team. Their input is necessary when developing educational plans for their children. By participating as team members, they share information that insures the selection of appropriate skills, as well as activities, and environments for instruction.

The functional curriculum process requires the completion of a parent or caregiver inventory that ideally is conducted by the educator in the student's home. Since interviews are conducted in the student's home environment, the educator has an opportunity to observe student-family interactions in a setting familiar to the student, become aware of family routines, and learn about cultural or social attitudes which are important to the family's functioning. Additionally, parents and caregivers are often the best resources for identifying student preference and choice-making behaviors that are often overlooked by others.

5. Student Preferences and Choices

Recently, educators have recognized the importance of acknowledging preferences and choices of students with dual sensory and multiple impairments. However, it may be difficult to determine student preferences and choice-making behaviors if they use unintentional communicative behaviors (e.g., inconsistent eye blinks, body movements, or oral motor movements) in place of more conventional behaviors that would clearly indicate a preference or choice (e.g., verbally expressing, "I do not want that one. I want this one," or signing, "I do not like PE.").

A student preference and choice inventory is part of the functional curriculum process. Students are observed interacting with various materials and activities, and their expressions of likes and dislikes are recorded. Parents and caregivers can also provide information, such as activities their children enjoy, what times of day they are the most active, or if they like activities of a fast, moderate, or slow pace. This information is taken into consideration when selecting activities and skills for the educational programs of students.

Again, solicit comments and first hand experiences from participants.

6. Instruction in Natural Environments

Instruction occurs in those settings where the student will actually perform the activity. This means that the student's educational program will frequently occur outside of the classroom, such as conducting a money exchange program in the bank or working on folding skills at the local newspaper office. Training students in the location where the activity actually occurs increases the chance that students will learn skills more quickly and be able to transfer those acquired skills from one setting to the next. This is especially important for students with dual sensory and multiple impairments as they often have difficulties in generalizing skills they have learned previously.

Instruction in natural environments involves regularly scheduled, systematic, and one to one or small group (i.e., no more than two students with disabilities) instruction within those environments. Examples include going to a group home in the morning to conduct bed making, laundry, and food preparation activities three days a week, two hours per day for two students who are within the 16-21 age range. Likewise, same age students may participate in elective classes with their nondisabled peers, such as art, choir, or woodworking. (Remember, the amount of time spent in classroom, nonclassroom, and community instruction will vary depending upon the age of the student.) This scheduling arrangement provides students with many opportunities to practice skills within their school and nonschool environments.

At this point, you could ask participants to discuss which activities in their students' programs are taught or could be taught in the community.

7. Partial Participation

No student, regardless of the severity of their disabling conditions, should be excluded from participating in any instructional activity within the functional curriculum model. Students with the most profound disabling conditions can be included in some aspect of the activity. All that is necessary for a student to partially participate in an activity is one repeated movement whether it is momentary fixation, one foot moving sideways, or eyebrows raising up and down (Baumgart et al., 1982).

Some students with dual sensory and multiple impairments may not be able to perform all the steps of a skill sequence without assistance or adaptations. In order to enhance independent participation, different types of adaptations may be needed for instruction. These adaptations are available or can be made. Adaptations may include:

Display Overhead 12 and use it as an outline for the following information.

a. physical and prosthetic devices
   - a tactile communication board accompanied by written words on the back of the board
   - an electronic switch used to operate a blender

b. altering skill sequences
   - sitting on a locker room bench before removing a bathing suit
   - continuously pressing a pop selection button while putting money into a vending machine

c. altering rules
   - allowing the student one and one-half gym periods to compensate for the time it takes to travel to gym class, change into gym clothes, participate in gym, shower, dress, and travel back to class
   - having a nondisabled co-worker punch the time clock when the student arrives and departs from a job site

d. providing instructional prompts
   - tapping student's elbow as a signal to reach for an item on a shelf in the grocery store
   - gesturing to keep voices lowered while working in a library

e. altering environmental conditions
   - providing non-glare surfaces in the work environments
   - amplifying the intercom system

f. altering social and attitudinal factors

- conducting peer inservice training on disability awareness by having students in regular education rotate through different stations that simulate varying disabilities
- describing the appearance of seizure activity to the student's work supervisor and nondisabled co-workers, as well as instructing them on procedures to follow in case a seizure would occur at work

Display Overhead 13 as you discuss the next section with participants.

To determine whether or not adaptations are required for participation, educators and parents need to ask the question, "Will the student be excluded from an activity without the use of an adaptation?" (Mirenda, 1987). For example, dressing was selected by the parents as a priority skill to be learned. Several questions were asked by the student's teacher. "Would the student be excluded from dressing activities since she had limited range of motion in her upper and lower extremities?" Probably yes. "Would she need some type of adaptation in order to perform the skills?" Definitely yes. Adaptations selected for this student were adjusting the skill sequence and using instructional prompts. The sleeve was put on her arm to the point where the opening just covered her fist. She was given a touch cue on the wrist paired with a verbal prompt that signaled her to push her fist through the sleeve. These instructional adaptations allowed her to participate in the dressing sequence.

8. Integration with Nondisabled Peers

Students with dual sensory and multiple impairments have greater opportunities to interact with their nondisabled peers when they attend chronologically age-appropriate neighborhood schools (e.g., 12-15 year old students attend junior high or middle school, and 16-18 year old students attend high school) and participate in functional activities. These conditions can assist students in developing friendships that may last during their school careers or throughout their lives.

An important component of a functional curriculum includes student participation in classroom environments within a school setting. Students with dual sensory and multiple impairments may participate in activities with their nondisabled peers, such as library, gym, music, choir, art, homeroom, woodshop, or home economics. They also may participate in extracurricular activities, such as sporting events, pep rallies, theatrical productions, student government, and variety clubs. Nondisabled peers also may accompany a student to community training environments, such as McDonald's to eat lunch, a video arcade at a local mall to play electronic games, or to a department store to shop for clothes.

Some functional curricular models include placement of students with dual sensory and multiple impairments in the grade level classroom with their nondisabled peers. For example, a six year old student with dual sensory and multiple impairments and severe mental retardation is placed in a regular education first grade classroom. Part of his school day is spent with a paraprofessional participating in instructional activities that correspond with the activities of his nondisabled peers. During reading groups, he activates a switch which records students' voices reading the story, and during roll call, lunch count, and the pledge of allegiance, he reviews tactilely his object schedule with a paraprofessional so he can anticipate events of his school day.

There are many models available which can serve as guides for smooth transitions of students into integrated environments. Conducting a Disability Awareness Week, having students experience simulated disability conditions, or developing a peer tutor program are just a few of the preparation activities that have been used successfully. Whichever model is selected for integration, it is important for parents and educators to systematically plan and prepare regular education personnel, parents, and students prior to placing students with dual sensory and multiple impairments in regular education classrooms.

At this point, you may choose to have participants discuss integration activities in which their students are involved, or activities in which their students could be involved at school.

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9. Transdisciplinary Involvement

Transdisciplinary involvement is helpful when using a functional curriculum model. A transdisciplinary team is one in which most of the professionals serve as consultants rather than in "direct service" roles. A team leader (sometimes referred to as a program manager) is identified for each student. The team leader, typically the teacher, coordinates the contributions of all team members to ensure that therapeutic suggestions are integrated throughout the school day.

Responsibilities of teachers, paraprofessionals, related service personnel, and parents have changed from their traditional roles to support this integrated service delivery system. The teacher assumes the responsibility of coordinating information from various related service personnel to ensure that goals and objectives are met, and to ensure the infusion of skills (e.g., motor, communication, cognitive, and sensory) across life areas. Related services personnel (e.g., physical therapist, occupational therapist, vision consultant, orientation and mobility instructor, speech therapist, or audiologist) may have to assess and instruct students on specific skills in both school and community environments. These specialists are discouraged from providing instruction in isolated therapy rooms, especially during time periods that do not follow a daily schedule typical for nondisabled peers. For example, the physical therapist (PT) accompanies two students to a grocery store in the community every Friday afternoon. The PT assesses one student on motor functioning and provides instruction to the other student on transferring from the car to the walker, balance and gait training, and body orientation. While shopping, the PT prompts one student to use an amplified voice calculator with raised numerals and assists the other student with match-to-sample textures in her communication wallet that she uses for a shopping list. The PT collects data and makes notes on any physical adaptations the students may need to help them perform shopping skills more independently.

In this scenario, the PT delivered instruction taught to him by the orientation and mobility instructor (e.g., body orientation and travel), a communication program (e.g., match-to-sample with the tactile communication wallet) as taught to him by the speech pathologist, and an academic program (e.g., amplified voice calculator with raised numerals) taught to him by the teacher. Upon returning to school, he will share data with other team members. This example represents the infusion of skills in the community life area and the collaborative effort of team members. This method of instruction increases the likelihood that generalization will occur as students are provided with many opportunities to practice motor, communication, cognitive, and sensory skills across various settings, individuals, and materials.

F. Training Activities

If time permits, you may want to select one or more of the following activities for participants to conduct, providing these were not used earlier during the session.

1. Generate five functional activities in each of the life areas (i.e., work, independent living, recreation/leisure, community life, and regular education) that participants could consider for their students. Have participants divide into groups according to the ages of their students (e.g., pre-school, elementary, junior high or middle school, and secondary).

2. Have participants discuss which activities of programs for their students are currently taught in the community or could be taught in the community.

3. Have participants discuss any integration activities in which their students are involved or in activities in which their students could be involved at school.

V. Content-Part III: The Functional Curriculum Process

A. Module Delivery Organization

1. Lecture Number: 3

2. Amount of Time: One hour

3. Specific Outcome Competencies

   Participants will be able to:

   a. describe the functional curriculum process

   b. conduct an ecological inventory

   c. complete a discrepancy analysis for one student

   d. suggest adaptations that could be used for instruction.

B. Content Overview Outline

1. The Process

2. Selecting Activities and Skills for Instruction

C. Suggested Readings for the Trainer

Brown County Special Education Cooperative. (1986). *Community-based instruction forms.* Hiawatha, KS: Author.

Brown, F. (1987). Meaningful assessment of people with profound and severe handicaps. In M. E. Snell (Ed.), *Systematic instruction for students with severe handicaps (3rd ed.)* (pp. 39-63). Columbus, OH: Charles E. Merrill.

Brown, L., Branston, M. B., Hamre-Nietupski, S., Pumpian, I., Certo, N., & Gruenwald L. (1979). A strategy for developing chronological age-appropriate functional curricular content for severely handicapped adolescents and young adults. *The Journal of Special Education, 13* (1), 81-90.

Brown, L., Shiraga, B., York, J., Zanella, K., & Rogan, R. (1984). *The discrepancy analysis technique in programs for students with severe handicaps.* Madison, WI: Madison Metropolitan School District.

Conn-Powers, M., & Thousand, J. (Eds.). (1983). *Burlington's making special friends project (Vols. I-IV).* Burlington: University of Vermont, Center for Developmental Disabilities.

Falvey, M. A. (1986). *Community-based curriculum: Instructional strategies for students with severe handicaps.* Baltimore: Paul H. Brookes.

Falvey, M. A., & Anderson, J. (1983). Prioritizing curricular content. In A. Donnellan, J. Anderson, L. Brown, M. Falvey, G. LaVigna, L. Marcus, R. Mesaros, P. Mirenda, G. Olley, & L. Schuler (Eds.), *National Society for Children and Adults with Autism: National personnel training, Module III.* Unpublished manuscript.

Ford, A., Schnorr, R., Meyer, L., Davern, L., Black, J., & Dempsey, P. (1989). *The Syracuse community-referenced curriculum guide for students with moderate and severe disabilities.* Baltimore: Paul H. Brookes.

Houghton, J. (1986, August). *Community intensive instruction for students with severe multiple handicaps.* Paper presented at the SMH/D-B Summer Task Force Committee, Vasar, KS.

Kansas State Department of Education. (Director/Producer). (1989). *Community-based recreation and leisure training for students with severe multiple handicaps and deaf-blindness* [Videotape]. Emporia, KS: Innovative Communications, Inc.

Kansas State Department of Education. (Director/Producer). (1987). *Independent living skills in community-based instruction for students with severe multiple handicaps and deaf-blindness* [Videotape]. Emporia, KS: Innovative Communications, Inc.

Kansas State Department of Education. (Director/Producer). (1987). *Vocational training in community-based instruction for students with severe multiple handicaps and deaf-blindness* [Videotape]. Emporia, KS: Innovative Communications, Inc.

Nietupski, J., & Hamre-Nietupski, S. M. (1987). An ecological approach to curriculum development. In L. Goetz, D. Guess, & K. Stremel-Campbell (Eds.), *Innovative program design for individuals with dual sensory impairments* (pp. 225-254). Baltimore: Paul H. Brookes.

Orelove, F. P., & Sobsey, D. (1987). Curriculum and instructional programming. *Educating children with multiple disabilities: A transdisciplinary approach* (pp. 157-181). Baltimore: Paul H. Brookes.

Turnbull, A. P., Brotherson, M. J., Bronicki, G. J., Benson, H. A., Houghton, J., Roeder-Gordon, C., & Summers, J. A. (1985). Parent/family inventory of current and future environments. *How to plan for my child's adult future: A three part process to future planning* (pp. 6-13). Lawrence: University of Kansas Affiliated Facility, Bureau of Child Research.

York, J. (1985, September). *Strategies for developing individualized functional curriculum for students with developmental disabilities.* Paper presented at the Statewide Conference, Bismarck, ND.

D. Introduction to the Content, Part III

Introduce this session by telling participants that the purpose of this part of the module is to present steps involved in the functional curriculum process, and the selection of activities and skills for instruction.

E. Specific Content

1. The Process

The process of planning a functional curriculum can be complex. Individualized instructional programs are designed based: parents and caregivers, student preferences and choices, assessments of present and future environments, identification of skills necessary to function within those environments, assessment of student performance, and adaptations the student may need to partially participate in the activities.

Display Overhead 14 as you discuss and review each stage of the process. Ask participants if they have questions about the process.

Each step of the process is described in detail and presented in order of occurrence.

a. Parent inventories. Before their children are born, many parents set goals and develop ideas about where their children are going to live, what they are going to be when they grow-up, and how their children are going to be educated. As their children grow, parents and caregivers control environments and activities in which their children participate. They also have a great deal of knowledge regarding capabilities, preferences, and skills of their children. This holds true for parents of children in regular or special education programs. Additionally, since parents of children enrolled in special education programs may provide additional support to the team, parents should always be involved in decision-making regarding the educational futures of their children.

The first step in the functional curriculum process is to conduct a parent inventory. Teachers conduct parent inventories to determine parents' priority objectives for their children, how they perceive the current levels of functioning of their children, and what they perceive as the present and future needs for their children.

At this point, you may want to ask participants to generate a list of reasons why parent inventories are important. Record their comments on an overhead transparency, chalkboard, or flip chart. Add any of the following reasons that might not have been included.

Parent inventories are important sources of information because they:

i. contain information regarding parent preferences for environments and skills that they would like their children to perform across five life areas

ii. help teachers identify target environments in which these skills can be assessed and taught

iii. assist teachers in determining the current levels of functioning of their students within life areas

iv. provide opportunities to discuss transition needs from school to post-school environments

Display Overhead 15 and refer to it as you review each item.

The following is a summary of items typically found on a parent inventory:

i. Identify the type of activities in which your child participates and the level of participation.

ii. List activities that you want your child to learn by order of importance.

iii. Identify future living arrangements other than home.

iv. Identify your child's preferences for occupations or living arrangements.

v. Identify occupations or living arrangements that would be particularly undesirable to your child.

Distribute Handout 2. Let participants review and comment on the inventory. Ask them if they have completed a similar document and if they found it useful.

b. Student preference/choice surveys. Student preference/choice surveys are another means to assist in educational planning. Using activities that the student prefers may increase the student's level of motivation, make the activity more enjoyable, and have the potential to reduce behavior problems.

Sometimes it is difficult to determine preferences and choices of students, especially those students with limited communication repertoires. Interviews with families and friends, or observation of the student's responses in a variety of environments, activities, as well as with different materials and people will help determine student preferences.

Display Overhead 16 and refer to it as you review each item.

The following is a summary of items typically listed on a student preference/choice survey:

i. Identify the primary modes of communicating likes and dislikes

ii. Identify how the student makes a selection when given a choice.

iii. List the kinds of choices the student has an opportunity to make.

iv. Identify how many opportunities per day the student has to make choices.

v. List the related environmental conditions that the student prefers (e.g., likes to be alone or with a large group of people; or likes highly repetitive activities or non-repetitive activities).

vi. Identify the times of day the student is most active and most tired.

Distribute Handout 3. Let participants review and make comments. Ask them how they anticipate and identify student responses.

c. Life areas. Each life area is made up of a body of curricular content that is relevant to the student's chronological age and participation in least restrictive environments. Life areas are identified by parents and educators as important for the smooth transition of students to future instructional work, or residential settings, as well as current life functioning. These areas are relevant to both students with dual sensory and multiple impairments and their nondisabled peers. The five life areas are:

Display Overhead 17 and refer to it as you review each life area.

i. independent living

ii. work

iii. recreation/leisure

iv. community life

v. regular education

d. Ecological inventories (or environmental inventories). After assessments have been administered and skills have been identified, ecological inventories can be conducted. Ecological inventories are surveys of potential training environments used to identify activities during which skill instruction can occur. Essentially, an ecological inventory is exactly what it sounds like: an inventory of the ecology or features of a particular setting.

e. Environments. Life areas are divided into environments. Environments are locations where students currently function or will function in the future. For example, the community is a life area. Environments within the community life area are grocery stores, shopping malls, libraries, or post offices. Environments located within the independent living life area are student homes, group homes, staff homes, apartment settings, or respite care facilities. Environments that could be included in the life area of work are hospitals, restaurants, and banks. Possible environments for the recreation/leisure life area may include movie theaters, bowling alleys, parks, video arcades, or the YMCA. The regular education life area could include environments, such as homeroom, woodshop, or fifth grade English.

f. Subenvironments. Environments identified for each life area are divided into sections. These sections are known as subenvironments. For example:

Display Overheads 18-22 to illustrate each of the following examples.

1. Life Area: Independent living

   Environment: Group home

   Subenvironments: bathroom, bedroom, garage, kitchen, dining room, deck, patio, living room, basement

2. Life Area: Community life

   Environment: Grocery store

   Subenvironments: parking lot, entry, shopping areas by categories (e.g., dairy or produce), checkout lanes

3. Life Area: Work

   Environment: Hospital

   Subenvironments: parking lot, entry, employee lounge, janitor's area, hallways, assigned patients' rooms, employee bathroom, employee locker room, stock room, supply room

4. Life Area: Recreation/leisure

   Environment: Bowling alley

   Subenvironments: parking lot, entry, locker area, shoe counter, ball rack, lanes, snack room, bathroom

5. Life Skill Area: Regular education

   Environment: Homeroom

   Subenvironments: doorway, desk area, blackboard

g. Activities. Subenvironments are divided into activities. Activities conducted in subenvironments are those typically performed by the student's nondisabled peers. For example:

1. Life Area: Independent living

Display Overheads 23-27 to illustrate each of the following examples.

Environment: Student's home

Subenvironment: Bathroom

Activity: Brush teeth

2. Life Area: General community

   Environment: Post office

   Subenvironment: Counter

   Activity: Purchase stamps

3. Life Area: Work

   Environment: Lawn and Garden Center

   Subenvironment: Greenhouse

   Activity: Water plants

4. Life Area: Recreation/leisure

   Environment: Bowling alley

   Subenvironment: Shoe counter

   Activity: Rent bowling shoes

5. Life Area: Regular education classes

   Environment: Homeroom

   Subenvironment: Doorway

   Activity: Enter classroom

h. Skill sequences. Skill sequences are developed after activities have been identified in each life area. Skill sequences are the logical order of events that occur within a given activity and are based on those skills demonstrated by the student's nondisabled peers. For example:

1. Life Area: Independent living

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Display Overheads 28-32 to illustrate each of the following examples.

Environment: Apartment

Subenvironment: Bedroom

Activity: Dust

Skills:

a. Look for cleaning materials

b. Obtain cleaning materials

c. Prepare cleaning materials

d. Dust furniture

e. Check to see if area is dust free

f. Move cleaning materials to the next piece of furniture (repeat steps d & e for each piece of furniture in the room)

g. Put cleaning materials away

2. Life Area: Community life

Environment: Bank

Subenvironment: Safety deposit box area

Activity: Place contents in a safety deposit box

Skills:

a. Request assistance

b. Follow bank officer

c. Sign signature sheet

d. Remove keys

e. Locate box

f. Open box

g. Place contents in safety deposit box

h. Lock box

i. Sign out

j. Leave area

3. Life Area: Work

Environment: Theater

Subenvironment: Theater seating area

Activity: Wash seats

Skills:

a. Obtain equipment

b. Prepare for cleaning

c. Wash seat

d. Check to see if seat is dirt free

e. Move to next seat (repeat c & d until all seats have been washed)

f. Put materials away

4. Life Area: Recreation/leisure

Environment: Restaurant

Subenvironment: Cafeteria line

Activity: Select food

Skills:

a. Locate tray and utensils

b. Push tray

c. Scan choices

d. Make selection

e. Make request

f. Reach for food

g. Move to desserts (repeat c-f proceeding through the entire line)

h. Obtain receipt

i. Pay for food

5. Life Area: Regular education

Environment: Art classroom

Subenvironment: Sink area in classroom

Activity: Clean paint brushes

Skills:

a. Locate sink

b. Take paintbrushes to sink

c. Turn on faucet

d. Adjust temperature

e. Place paintbrushes under stream of water

f. Rotate brushes from side to side until they are clean

g. Turn off water

h. Shake off excess water off brushes

i. Dry brushes with paper towel

j. Put brushes away

Display Overhead 33 and refer to it as you discuss the following section.

i. Discrepancy analyses. Discrepancy analyses are comparisons between skills performed by a nondisabled peer and those of a student with dual sensory and multiple impairments who participates in the same activity within the same environment. A discrepancy analysis is used to identify which skills are present and absent from the latter student's repertoire. Based upon the information obtained from the discrepancy analysis, the teacher can make decisions on what steps of the skill sequence should be adapted, what level of assistance is needed to perform the skill, and which steps of the activity can be performed independently by the student.

Distribute Handouts 4 & 5. Ask if two or more participants have examples of discrepancy analyses they would like to share with the group.

Steps educators should follow when conducting a discrepancy analysis are:

i. Determine what activities to teach.

ii. Identify important skills necessary to perform the activity.

iii. Determine present needs and abilities of the student with dual sensory and multiple impairments.

iv. Determine skills that the student can acquire by partial participation.

v. Determine individualized adaptations.

j. Instructional programs. Instructional programs are developed based upon the student's individual needs. These needs are identified by the transdisciplinary team. Their decisions are based on results of inventories, surveys, formal and informal assessment processes, and ecological analyses. Based on results from each assessment, the team plans instructional goals and objectives for the school year.

Team members are also responsible for identifying adaptations needed for each student to participate in instructional activities. To review, these adaptations may be one or a combination of the following:

Display Overhead 34 as you review the following adaptations.

i. physical and prosthetic devices
ii. altering skill sequences
iii. altering rules
iv. providing instructional prompts
v. altering environmental conditions
vi. altering social and attitudinal factors

2. Selecting Activities and Skills for Instruction

Selecting priority activities and skills can be a complex and difficult task for team members using a functional curriculum approach. All of the activities and skills necessary to participate in various environments can be overwhelming, especially without a system for identifying instructional activities and selecting priority skills.

Display Overhead 35 and refer to it as you discuss the following section with participants.

a. Selecting activities. Special considerations must be made when selecting activities and skills for students with dual sensory impairments. Activities that require total reliance on visual and auditory input often have little or no function for students with dual sensory impairments. Many activities have only visually reinforcing value, such as coloring a picture with crayons, or viewing paintings at an art gallery. Other activities require either some degree of vision or hearing to benefit from participating, such as attending a football game or watching a movie. These activities would not be particularly reinforcing for a student with no functional or useful vision or hearing. Activities that include properties of movement (i.e., vestibular stimulation), physical contact (e.g., tactile), and other sensory stimulation (e.g., gustatory and olfactory) would be more appropriate for a student who has no functional use of vision or hearing. For example, a high priority activity was selected for a six year old student with no functional visual or hearing skills. The activity, simple meal preparation, was selected based on the following criteria:

   i. The activity contained a variety of properties including tactile (e.g., vibration of the blender, touching liquid, or food textures); gustatory (e.g., used taste as a natural consequence for skill performance); and olfactory (e.g., stimulation received by experiencing differing odors from the kitchen).

   ii. The activity was identified by the parents as a priority activity.

iii. Eating is one of the student's preferred activities.

Within each broad category the following dimensions should be evaluated:

i. the probability of the activity occurring in present and future environments

ii. whether or not the activity is chronologically age-appropriate

iii. whether or not the activity will increase interactions with nondisabled peers

Distribute Handout 6. Review it with participants. Ask them to provide an example of an activity they have selected for one of their students. Use the handout as a guide for selection.

Team members may find it useful to develop a checklist which includes activities, critical dimensions, and whether the activity is a parent, staff, or student preferred item. Each critical dimension of an activity is rated on a scale from 1 (low) to 3 (high). The scores are totaled. Those activities with high rankings are considered priority activities. Likewise, those activities with low rankings should be considered low priority items. For example, the activity of using a vending machine for a 10 year old student with dual sensory and multiple impairments was rated as 36 out of 57 points. However, the activity of using a video arcade at a mall was rated as 50 out of 57 points. Using a video arcade would be considered as a priority activity under the recreation/leisure life area.

b. Selecting skills. An activity is divided into a logical skill sequence or response (i.e., behavior) chain that results in a natural outcome. A skill sequence must have a beginning (i.e., preparation), middle (i.e., execution), and end (i.e., termination) in order to be considered an activity (Wilcox & Bellamy, 1987).

The development of skill sequences within activities should reflect the input of all team members. The participation of a range of professionals in the selection of priority skills may promote maximum therapeutic effect through repeated opportunities to perform those skills. Of particular importance are objectives contributed by the speech/language pathologist, occupational therapist, and physical therapist, as well as the vision and hearing itinerant teachers. This aspect of the transdisciplinary team approach may lead to more generalized use of communication, motor, and sensory skills across life areas and subsequent environments.

Team input is another source for selecting priority skills in addition to the process of conducting discrepancy analysis (Refer to Handouts 4 & 5). These two steps are supplemented, as well, with data from a variety of sources including developmental assessments, parent inventories, student preference surveys, and review of past performance (e.g., learning style or sensory factors, such as illumination).

Display Overhead 36 and refer to it as you discuss the following informal assessment questions.

Gee (1989) has identified additional informal assessment information to consider during selection of priority skills necessary to function within activities:

i. How does the skill affect the student's quality of life?

ii. How does the student receive information (e.g., residual vision, residual hearing, or tactually)?

iii. What method(s) does the student use to physically demonstrate participation?

iv. How can the student immediately participate in the activity.

v. Will the skill allow the student to initiate control?

vi. Will the skill affect the student's ability to interact with others?

vii. Does the skill require reciprocal participation?

viii. What health constraints will directly affect student performance.

Skills targeted for instruction are typically those that are:

i. currently absent from the student's repertoire

ii. performed incorrectly

iii. performed with maximum assistance

After determining that priority skills are selected based upon information collected from the variety of sources, and that they are functional, meaningful, and chronologically age-appropriate, direct intervention strategies or adaptations are developed to facilitate student participation within activities.

Distribute Handout 7 and refer to it as you review the following content with participants.

After all of the factors described above have been considered, a draft skill sequence is generated. It should be conceptualized as having three sections: preparation, execution, and termination. This approach may promote inclusion of instructional objectives from the range of necessary sources, including related services personnel, parents, and a variety of assessment models.

F. Training Activities

Select one or more of the following activities as time permits and depending upon the preferences of participants.

1. Have participants view either the independent living, community-based instruction, recreation/leisure, or vocational training videotape listed in the.Suggested Readings. Ask for their comments.

2. Have participants complete the parent inventory (Handout 2). Ask for volunteers to present an area of the inventory before a large group or in small groups.

3. Have participants complete a student preference/choice survey for one student (Handout 3). Ask for volunteers to present an area of the survey before a large group or in small groups.

4. Have participants divide into small groups. Assign each group a life area and have them identify at least two envirohments within that life area. Then, have them identify two subenvironments for each environment they identified.

5. Have participants develop an ecological inventory for a subenvironment either inside or outside of the meeting area. Divide participants into pairs to conduct the activity. Have them present their results in front of the large group.

6. Using the information from the following vignette and their ecological inventories, have participants conduct a discrepancy analysis. Have several participants describe their results.

G. Scenario/Vignette

Calvin, who is 20, has a severe visual impairment and a moderate hearing loss. He is able to pull himself to standing. With teacher assistance, he is able to use a rollator walker. When excited, Calvin vocalizes a great deal. He is unable to express any basic wants through symbolic communication. The group home staff report that they are able to interpret to determine his wants and needs by his body movements. For example, when he sits on the edge of the chair or bed, and flaps his arms, he usually has to go to the bathroom; when he puts his finger in his mouth, he is hungry; and when he pushes objects or materials away, he has finished an activity. He is not on a time schedule toilet training, but he has about two accidents a day. Calvin can feed himself with partial physical assistance. He needs help scooping food onto his spoon and returning his cup to the table. If left on his own, he will fling his cup onto the floor after taking a drink. He takes his shoes and socks off independently, but does not participate in any other dressing tasks at the group home. He washes his hands and brushes his teeth only when given total physical assistance. Calvin independently uses his free time to crawl around the room and drag things off of tables, or sits and twirls small objects. When people greet him, he usually smiles and vocalizes if they are familiar to him. He seems to like loud musical activities, food, and being with other people.

VI. Content-Part IV: Additional Factors to Consider During Curricular Implementation

A. Module Delivery Organization

1. Lecture Number: 4

2. Amount of Time: One hour

3. Specific Outcome Competencies

   Participants will be able to:

   a. develop a classroom schedule which includes functional, community-based activities

   b. identify potential liability and transportation issues involved in community-based instruction

   c. develop preliminary planning strategies for implementing a functional curriculum approach

B. Content Overview Outline

1. Preliminary Planning Strategies

2. Liability Issues

3. Transportation

4. Staff and Student Ratios

5. Classroom Schedules

6. Funding

C. Suggested Readings for the Trainer

Falvey, M. A. (1986). *Community-based curriculum: Instructional strategies for students with severe handicaps.* Baltimore: Paul H. Brookes.

Falvey, M. A., Grenot-Scheyer, M., & Luddy, E. (1987). Developing and implementing integrated community referenced curricula. In D. J. Cohen & A. M. Donnellan (Eds.), *Handbook of autism and pervasive developmental disorders* (pp. 238-250). New York: John Wiley & Sons.

Gee, K. (1989, August). *Integrated curriculum design.* Paper presented at the Kansas and Missouri Summer Institute, Kansas City, KS.

Horner, R. , Meyer, L., & Fredericks, H.D. (Eds.). (1986). *Education of learners with severe handicaps: Exemplary service strategies.* Baltimore: Paul H. Brookes.

Kansas State Department of Education. (Director/Producer). (1989). *Administrative issues in community-based instruction* [Videotape]. Emporia, KS: Innovative Communications, Inc.

Lyon, S. R., Domaracki, J. W., & Warsinski, S. G. (1989). *Preparation for integrated community living and employment: Curriculum and program development.* Harrisburg, PA: Central Pennsylvania Special Education Resource Center.

Wilcox, B., & Bellamy, G. T. (1987). *A comprehensive guide to the activities catalog: An alternative curriculum for youth and adults with severe disabilities.* Baltimore: Paul H. Brookes.

Wilcox, B., & Bellamy, G. T. (1982). *Design of high school programs for severely handicapped students.* Baltimore: Paul H. Brookes.

D. Introduction to the Content, Part IV

Introduce this session by announcing the title and displaying Overhead 37. Refer to it as you review topics with participants. Next, you may want to say, "This session will provide a description of other factors to consider when developing a functional curriculum. These considerations are:

1. ***Preliminary planning strategies***
2. ***Liability issues***
3. ***Transportation***
4. ***Staff and student ratios***
5. ***Classroom schedules***
6. ***Funding"***

E. Specific Content

1. Preliminary Planning Strategies

Comprehensive planning and program development are necessary to implement a functional curriculum approach, especially since much instruction is conducted in community sites. Adopting a community-based approach requires extensive support from administrators, educational staff, parents, and the community.

Display Overhead 38 and refer to it as you discuss the following section with participants.

To facilitate program implementation, a task force should be developed consisting of key representatives. These key representatives should include educational personnel from both regular and special education; administrators at the district, building, and board level; vocational rehabilitation representatives; and any adult service provider or community business association member. Primary responsibilities of committee members include:

a. Developing policies and procedures.

b. Conducting planning activities for program implementation, which include inservice training for staff and meeting with parents.

c. Conducting on-going program evaluation.

d. Collaborating with existing committees which are involved in curriculum development.

Each member of the task force is assigned specific responsibilities to perform. For example, one or two members may be responsible for reviewing existing policies of student supervision, liability insurance, and transportation to and from community sites. One or two members may be responsible for working with the already established curriculum committee members to review and revise existing curriculum materials, and scope and sequence charts. Other members may be responsible for establishing an inservice training plan for both staff and students in regular and special education programs.

Display Overhead 39 and refer to it as you review the following information with participants.

Strategies found to be effective in facilitating the implementation of a community-based program include (Lyon, Domaracki, & Warsinski, 1989; Schnorr, Ford, Davern, Park-Lee, & Meyer, 1989):

a. Obtaining support from administrators.

b. Obtaining parent support.

c. Developing plans for an acceptable staff-to-student ratio, transportation, and insurance coverage.

d. Obtaining funds for transportation costs.

e. Training regular and special education staff.

2. Liability Issues

Most school districts have policies in existence which address liability issues and insurance coverage. However, few districts have community-based instruction included in these policies. District personnel will need to review existing policies to guarantee adequate insurance coverage for staff and to delineate procedural safeguards. Additionally, the district's legal advisors should approve any revisions of policy and procedures that involve liability issues.

Display Overhead 40 and refer to it as you review the following information with participants.

The following are several safeguards district personnel may want to consider when revising policy to include insurance coverage for community instruction:

a. Adopting a district wide policy with approval from legal advisors and members of the board of education.

b. Contacting other districts similar in size to determine the extent of insurance coverage needed to provide community instruction.

c. Determining if insurance coverage of field-trips will suffice for conducting instruction in community environments.

d. Obtaining parental permission through a signed formal release agreement or using goals and objectives listed on the student's signed IEP as a guarantee that parents are aware of and approve community training for their child.

e. Developing emergency procedures which include appropriate identification for students, specific medical procedures that a student may need, and certifying staff in first aid and CPR.

f. Providing coverage for volunteers or student teachers (Falvey, 1986; Sailor, Halvorsen, Anderson, Goetz, Gee, Doering, & Hunt, 1987).

3. Transportation

Providing transportation for community-based instruction usually involves two issues: a) availability, and b) student programs. Both of these issues require detailed planning and precise scheduling for staff and administrators.

Display Overhead 41 and refer to it as you discuss this section with participants.

Since transportation is considered a related service necessary to support students in special education programs, it is essential that district personnel decide on its availability and delivery. District personnel have resolved some of the transportation issues by using one or a combination of the following methods to insure its availability (Falvey, 1986; Sailor et al., 1987).

a. Using driver education vehicles through career education departments.

b. Purchasing a vehicle through a grant or by a community service organization.

c. Conducting fund-raising events or securing donations from a local car dealership.

d. Accessing vehicles from other agencies.

e. Scheduling student drop-offs and pick-ups at community sites instead of school.

f. Using district buses or vans.

g. Using staff cars.

h. Using vehicles of parents or volunteers.

If vehicles are provided by teachers, parents, or volunteers for transporting students, District personnel should be sure these vehicles have adequate insurance coverage, should reimburse these individuals for the additional coverage, or include their insurance coverage within the district insurance policy.

It is important for all students involved in community instruction to learn how to access transportation services within their communities. Additionally, students (especially students with visual impairments) should learn orientation and mobility skills to increase independent functioning within community environments. Staff may want to conduct training on accessing community environments for some students. For example, a 16 year old student with dual sensory impairments learns caning techniques while walking to her job in the community. A 10 year old student with dual sensory and multiple impairments learns appropriate social behavior while riding a public bus to a recreation center.

4. Staff and Student Ratios

Display Overhead 42 and refer to it as you discuss this section.

The recommended staff to student ratio when conducting activities in the community varies from one staff member to two students (Sailor et al., 1987), to one staff member to three or four students (Falvey, 1986). Whatever staffing ratio is adopted through district policy, it is important to keep the ratio low. It should never exceed four students.

Large groups of students in the community create an artificial environment. Not only can large numbers of students overwhelm community members, but the group of students can often be perceived by community members as attending a "special outing" or a "special day."

Display Overhead 43 and refer to it as you identify strategies for assigning staff to students.

Falvey (1986) identified some strategies to consider when developing community instruction programs:

a. Using a cooperative or team teaching approach.

b. Using related services or support personnel.

c. Using volunteers or student teachers.

d. Having paraprofessionals conduct training programs within the same environment or in close proximity to the certified teacher if teacher certification is necessary for direct supervision (e.g., mall strip shops; large community vocational training sites, such as, hospitals; or large recreation centers, such as, YMCA's).

e. Grouping students heterogeneously (e.g., one student with severe behavior problems with one student who demonstrates appropriate social behaviors or one student who uses a wheelchair with one student who is ambulatory).

5. Classroom Schedules

Classroom scheduling is important to facilitate maximum student participation in integrated environments. Careful classroom scheduling is needed especially when students are participating in community instruction. Factors, such as natural instructional sequences, proximity of community sites, availability of staff, and the availability of transportation need to be considered when developing classroom schedules.

Flexibility is probably the most important factor when designing a classroom schedule (Falvey, 1986; Lyon et al., 1989; Wilcox & Bellamy, 1982). Those activities that have little flexibility should be scheduled first. Other suggestions to guide the design of classroom schedules include: reserving time for teacher planning, scheduling time for training and supervising staff, and scheduling community instruction prior to or following in-school instruction (Wilcox & Bellamy, 1982).

Display Overhead 44 and refer to it as you discuss strategies for designing classroom schedules.

Additional strategies to use when designing classroom schedules include:

a. Listing activities that are included on each student's IEP.

b. Scheduling group activities first.

c. Scheduling activities that are least flexible.

d. Scheduling activities that are more flexible.

e. Scheduling activities within naturally occurring routines.

f. Assigning staff and transportation vehicles for each activity occurring within each time period.

6. Funding

Although there is little information regarding the exact cost involved in conducting community-based programs, it has been reported that little if any additional costs are required. However, expenses not typically included in regular or traditional special education are apparent. These costs may include transportation, petty cash, and pay for work conducted in vocational settings. These situations require some creative methods for allocating expenditures to conduct community instruction (Falvey, 1986; Hamre-Nietupski, Nietupski, Bates, & Maurer, 1982).

It is important to anticipate and plan for expenses early in the school year to avoid funding shortages. In addition to perceived transportation costs and liability insurance coverage, other expenses may include adaptations needed for a student to perform a job at a work site or funds to open a bank account.

Display Overhead 45 as you review funding strategies.

Strategies to secure adequate funding have been developed by staff, researchers, and community members involved in delivering community instruction (Falvey, 1986; Lyon et al., 1989; Sailor et al., 1987). Some of the strategies are as follows:

a. Readjust budgetary line items, such as using monies allocated for classroom supplies for materials and money needed in the community.

b. Use money allocated for career education.

c. Open purchasing accounts with businesses accessed by students.

d. Find out if there is a reduced fare for utilizing public facilities or transportation.

e. Conduct fund raising activities.

f. Secure grants at the district or state level, or through private endowments.

g. Request money from the PTA or parent organization.

h. Have parents contribute a certain amount of money to open bank accounts.

i. Accept contributions.

j. Have parents develop a short shopping list for items that they need, along with money to purchase those items, and send it to school with the student.

k. Use school lunch money to purchase food at a grocery store.

l. Use school lunch money to eat at a local restaurant or in a cafeteria at a vocational training site.

F. Training Activities

The following activities provide participants with an excellent opportunity to respond to the content, as well as to communicate with each other.

1. Have participants view the videotape, "Administrative Issues in Community-based Instruction," listed in the Suggested Readings for the Trainer. Have them discuss their feelings and possible solutions to one of the potential considerations addressed in this part of the module.

2. Have participants divide into small groups. Use the following information to have groups develop a weekly classroom schedule for one student. Have group members present their

schedules to the large group.

G. Scenarios/Vignettes

1. STUDENT 1

Marty - 19 years old

(Non-ambulatory; profound hearing loss, uses hearing aids; visual field of 30, visual acuity 20/150 with glasses; uses electronic communication board with voice output)

a. Independent living - snack preparation, toileting, tooth brushing

b. Community life - eating in fast food restaurants, banking

c. Work - job sharing with another student on clerical tasks at Van Buren Insurance Company three afternoons a week

d. Recreation/leisure - video games, adapted T-Ball (baseball), Adaptive P.E., swimming at the YMCA three times a week

e. Extracurricular activities - equipment manager for baseball team; spectator events of football, basketball, and wrestling; member of the welcoming committee for student council

2. STUDENT 2

Tara - 12 years old

(Ambulatory; low finger dexterity; severe seizure disorder (code blue); functional vision and hearing losses; uses tactile communication board and vocalizations; severe range of cognitive functioning)

a. Independent living - meal preparation

b. Community life - grocery shopping, riding metro bus

c. Work - taking messages to the main office, putting mail in staff mailboxes

d. Recreation/leisure - P.E., swimming at the YMCA three times a week

e. Extracurricular activities - band, Girl Scouts

3. STUDENT 3

Rosa - 5 years old

(Ambulatory; stereotypic behaviors of finger flicking, head weaving and eye poking; cortical blindness; moderate to severe sensorineural hearing loss bilaterally; moderate to severe cognitive functioning; uses gestures to communicate)

a. Independent living - snack preparation

b. Community life - grocery shopping, eating at fast food restaurants

c. Work - cleaning blackboards, putting away books

d. Recreation/leisure - swinging at local playground in the park; swimming at YWCA

VII. Sources for Additional Information

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Publisher's address: Madison Metropolitan School District
Integrated Student Services
Attention: Publication Request
545 West Dayton Street
Madison, WI 53703
Phone number: (608) 266-6260
Cost of book: $10.00

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Attention: Publication Request
545 West Dayton Street
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Cost of book: $10.00

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Baltimore, MD 21285-0624
Phone number: 1 (800) 638-3775
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Baltimore, MD 21285-0624
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Phone number: (815) 756-2133
Cost of book: $10.00

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P.O. Box 10624
Baltimore, MD 21285-0624
Phone number: 1 (800) 638-3775
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P. O. Box 10624
Baltimore, MD 21285-0624
Phone number: 1 (800) 638-3775
Cost of book: $25.95

Kansas Department of Education. (Director/Producer). (1989). *Administrative issues in community-based instruction* [Videotape]. Emporia, KS: Innovative Communications, Inc.

Publisher's address: Kansas State Department of Education
120 East 10th Street
Topeka, KS 66612
Phone number: (913) 296-3953
Cost of videotapes: On loan basis

Orelove, F. P., & Sobsey, D. (1987). *Educating children with multiple disabilities: A transdisciplinary approach.* Baltimore: Paul H. Brookes.

Publisher's address: Paul H. Brookes Publishing Company
P. O. Box 10624

Baltimore, MD 21285-0624
Phone number: 1 (800) 638-3775
Cost of book: $28.00

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1300 Alum Creek Drive
Columbus, OH 43209
Phone number: (614) 890-1111
Cost of book: $34.95

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1920 Association Drive,
Department 9945B
Reston, VA 22091
Phone number: (703) 620-3660
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200 West Street

Waltham, MA 02254

Phone number: (617) 227-0730

Cost of book: $39.50

WETA. (Producers). (1988). *Regular lives* [Videotape]. Washington, DC: WETA Educational Activities.

Publisher's address: WETA Educational Activities

P. O. Box 2626

Washington, DC 20013

Phone number: 1 (800) 445-1964

Cost of videotape: $34.00

VIII. Evaluation Measures

A. Pre/Post Evaluation

Functional Curriculum Development and Implementation:
Service Provider Training Module

Downing, Eichinger, & Houghton

Name ______________________________ Pre __________

Date ______________________________ Post __________

# Points Possible: 30

Length of Time Allowed: 30 minutes

1. Name at least four components of a functional curricular approach for the education of students with dual sensory and multiple impairments. (4 pts.)

2. Describe the process of conducting an ecological inventory. (4 pts.)

3. Describe the steps involved in conducting a discrepancy analysis. (2 pts.)

4. What type of decisions can be made regarding a student's educational program after conducting a parent inventory and student choice and preference survey? (4 pts.)

5. Give two examples of how developmental information can be used when developing instructional programs for students with dual sensory and multiple impairments. (4 pts.)

6. Why is it important to conduct preliminary planning activities prior to the implementation of community-based instruction? Describe the decisions that need to be made during planning sessions. (6 pts.)

7. List the differences between a developmental curriculum model and a functional curriculum model. (8 pts.)

B. Answer Key

1. One point should be given for four of the nine components listed.

   a. Components
      i. Chronologically age-appropriate
      ii. Functional and meaningful skills
      iii. Life areas
      iv. Parent or caregiver preferences
      v. Student preferences or choices
      vi. Instruction in natural environments
      vii. Partial participation
      viii. Transdisciplinary involvement

2. Two points should be given for the correct answer.

   Ecological inventories are divided into environments, subenvironments, activities, and skill sequences. Discrepancy analyses are conducted as one of the final steps of the ecological inventory process. Any adaptations needed to perform skills within skill sequences are based on results from discrepancy analyses.

3. Two points should be given for the correct answer.

   The following steps should be followed to conduct a discrepancy analysis:
      i. List skill sequences necessary to perform the activity typical of the student's nondisabled peers.
      ii. Assess student performance by recording whether or not each skill in the sequence was performed independently.
      iii. Make notes on possible adaptations needed for the student to perform the skill and whether or not the skill should be considered for instruction.

4. Two points should be given for each correct answer.

   a. Parent inventory. Parents participate in the selection of goals, activities, and instructional environments for their children. Information can be obtained regarding student-family interactions, family routines, and cultural or social attitudes which are important to the family's functioning. Family members also may provide information on student preference or choice behaviors.

   b. Student preference or choice survey. Information can be obtained by observing students' interactions with various materials and recording their expressions of likes and dislikes. The selection of goals and activities for the education programs of students are based on this information.

5. Two points should be given for each example listed.

   a. Developmental information can be used as a guide for the selection of instructional objectives that are not above or below the student's cognitive, motor, sensory, or communication levels.

   b. Developmental information can be used for designing adaptations appropriate for the student's cognitive level. For example, if a student does not have object permanence skills, his work materials should not be put in opaque cabinets or containers. Plexiglas doors or work supply cabinets with clear plastic bins would make work items and equipment visible. The student would be able to view his work materials and retrieve them without having to rely on memory.

6. Six points should be given for the following correct answers.

   It is important to conduct preliminary planning sessions since much of the instruction may occur in community sites. It requires extensive support from administrators, educational staff, parents, and community members. Therefore, a planning committee meeds to be developed.

   Decisions that need to be made by committee members during planning sessions include:
   i. developing policies and procedures;
   ii. developing and conducting planning activities for program implementation;
   iii. conducting program evaluations; and
   iv. collaborating with members of existing committees involved in curriculum development.

7. Eight points should be given for the following correct answers.

   a. Developmental Curriculum
      i. It is based on the growth and development of non-disabled children.
      ii. Domains typically include: communication, motor, cognition, sensory, social/emotional, self-help, and vocational.
      iii. Progression is based on acquisition of skills in a sequence.
      iv. Instructional skills are based on developmental age.

   b. Functional Curriculum
      i. Instruction is based on current and future needs of the student.
      ii. Skills are taught across five life areas: independent living, community life, work, recreation/leisure, and regular education.
      iii. Adaptations are developed to increase participation in activities.
      iv. Instructional skills and materials are based on the chronological ages of students.

C. Participant Satisfaction Evaluation

A Series of Training Modules
on Educating Children and Youth
with Dual Sensory and Multiple Impairments

Participant Evaluation of Training

Functional Curriculum Development and Implementation: Service Provider Training Module

Trainer: ______________________ Date of Training: ______________________

Training Site: ____

Please read each of the following statements carefully and rate each statement using the following key:

1 = Strongly Disagree (SD)
2 = Disagree (D)
3 = Undecided (U)
4 = Agree (A)
5 = Strongly Agree (SA)

		(SD)	(D)	(U)	(A)	(SA)
1.	Overall, the content of this training met my expectations.	1	2	3	4	5
2.	I learned useful information about components of a functional curriculum approach with students who have dual sensory and multiple impairments as a result of this training.	1	2	3	4	5
3.	I learned useful information about strategies for developing and implementing a functional curriculum for students with dual sensory and multiple impairments as a result of this training.	1	2	3	4	5
4.	I learned useful information about conducting ecological inventories that can be used with students who have dual sensory and multiple impairments as a result of this training.	1	2	3	4	5
5.	The training provided specific information that I can apply.	1	2	3	4	5
6.	The training content was applicable to my needs as a service provider.	1	2	3	4	5
7.	Materials available from this training were relevant and beneficial.	1	2	3	4	5
		(SD)	(D)	(U)	(A)	(SA)

8.	The trainer demonstrated competency in the area of functional curriculum.	1	2	3	4	5
9.	The trainer communicated clearly and effectively.	1	2	3	4	5
10.	The trainer was responsive to the questions and needs of participants.	1	2	3	4	5
11.	The trainer encouraged active involvement by participants and was able to facilitate group discussion.	1	2	3	4	5
12.	The trainer was able to effectively present information through utilization of a multisensory approach (i.e., lecture, activities, discussion, overhead transparencies, handouts, readings, and videos).	1	2	3	4	5

13. Reflecting on these training activities, in what ways do you foresee implementing the training?

____

____

____

____

14. What were the strengths of this training?

____

____

____

____

15. What follow-up needs can you identify for yourself?

____

____

____

____

16. In what ways could these training activities have been improved?

____

____

____

____

Appendix A

Overhead Transparencies

CONTENT OUTLINE

1. Characteristics of a Developmental Curriculum Model

2. Benefits and Limitations of a Developmental Curriculum Model

3. Characteristics of a Functional Curriculum Model

4. Benefits and Limitations of a Functional Curriculum Model

(Overhead 1)

DEVELOPMENTAL SKILL DOMAINS

- Gross and Fine Motor
- Communication
- Cognitive
- Self-help
- Pre-academic/Academic
- Sensory (Vision and Hearing)
- Social/Emotional
- Pre-vocational/Vocational

(Overhead 2)

BENEFITS OF A DEVELOPMENTAL CURRICULUM MODEL

1. It is written in observable terms (Brown, 1987).

2. It is a global curriculum.

3. Progress can be measured by systematic and periodic administration of the evaluation instrument.

4. It can be used as a guide to decide skill selection.

5. It can be used to compare early development, especially for infants and toddlers (Orelove & Sobsey, 1987).

(Overhead 3)

LIMITATIONS OF A DEVELOPMENTAL CURRICULUM MODEL

1. It often results in teaching isolated skills which are not meaningful to the student.

2. Application of developmental sequences results in teaching earlier skills which are prerequisites to later stages of development.

3. Students with dual sensory and multiple impairments do not follow the same developmental sequences as their nondisabled peers.

4. The primary focus is on the skill rather than the function (Orelove & Sobsey, 1987).

5. It is a "bottom-up" rather than a "top-down" curriculum model (Orelove & Sobsey, 1987).

(Overhead 4)

CHARACTERISTICS OF SKILLS IN A FUNCTIONAL CURRICULUM MODEL

1. Chronologically age-appropriate
2. Functional
3. Meaningful
4. Reflect the impact of transition to the next environment
5. Relevant to performance in integrated settings

(Overhead 5)

LIFE AREAS IN A FUNCTIONAL CURRICULUM MODEL

1. Independent Living
2. Work
3. Recreation/Leisure
4. Community Life
5. Regular Education

(Overhead 6)

BENEFITS OF A FUNCTIONAL CURRICULUM MODEL

1. Provides opportunities for students to generalize and transfer skills from one environment to the next environment.
2. Skills are taught in natural sequences in integrated settings.
3. Chronologically age-appropriate skills and materials are utilized.
4. Instructional content is not pre-determined.
5. Skills targeted for instruction are future oriented.
6. It is designed to eliminate instruction of splinter skills (Orelove & Sobsey, 1987).

(Overhead 7)

LIMITATIONS OF A FUNCTIONAL CURRICULUM MODEL

1. It is a time consuming process.

2. It does not provide instructions or guidelines for deciding what to teach out of the many skills identified (Orelove & Sobsey, 1987).

3. If developmental information is disregarded, it is likely that skills selected for instruction may be beyond the capabilities of the student (Mirenda & Donnellan, 1987).

(Overhead 8)

COMPONENTS OF A FUNCTIONAL CURRICULUM

1. Life Areas
2. Chronologically Age-Appropriate Skills and Materials
3. Functional and Meaningful Skills
4. Parent or Caregiver Preferences
5. Student Preferences and Choices
6. Instruction in Natural Environments
7. Partial Participation
8. Integration with Nondisabled Peers
9. Transdisciplinary Involvement

(Overhead 9)

LIFE AREAS

1. Independent Living

2. Work

3. Recreation/Leisure

4. Community Life

5. Regular Education

(Overhead 10)

TO DETERMINE WHETHER A SKILL IS FUNCTIONAL

Ask:

1. If the student cannot perform the skill, is it important enough to have someone else do it for him? (Brown et al., 1979)

2. Can you see yourself performing the skill in everyday life? (Wilcox, 1989)

(Overhead 11)

TYPES OF ADAPTATIONS

1. Physical and Prosthetic Devices
2. Altering Skill Sequences
3. Altering Rules
4. Providing Instructional Prompts
5. Altering Environmental Conditions
6. Altering Social and Attitudinal Factors

(Overhead 12)

ADAPTATIONS

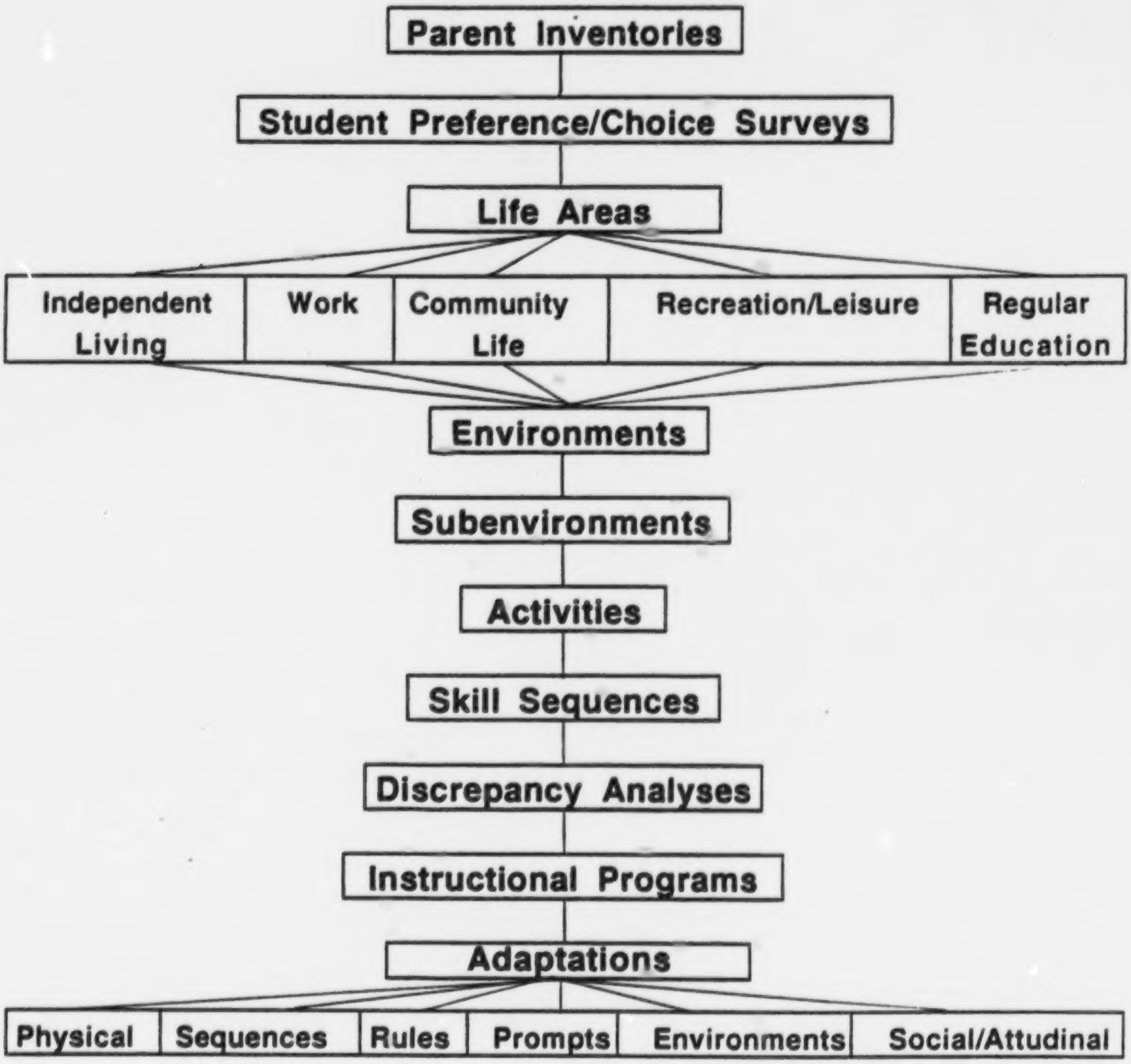
To determine whether or not adaptations are required for participation

ASK:

Will the student be excluded from an activity without the use of an adaptation? (Mirenda, 1987)

(Overhead 13)

THE FUNCTIONAL CURRICULUM PROCESS



Parent Inventories

Student Preference/Choice Surveys

Life Areas

Independent Living | Work | Community Life | Recreation/Leisure | Regular Education

Environments

Subenvironments

Activities

Skill Sequences

Discrepancy Analyses

Instructional Programs

Adaptations

Physical | Sequences | Rules | Prompts | Environments | Social/Attudinal

Adapted from: York, J. (1985, September). *Strategies for developing individualized functional curriculum for students with developmental disabilities.* Paper presented at the Statewide Conference, Bismarck, ND.

(Overhead 14)

PARENT INVENTORY SUMMARY

1. Identify the type of activities in which your child participates and the level of participation.

2. List activities you want your child to learn by order of importance.

3. Identify future living arrangements other than home.

4. Identify your child's preferences for occupations or living arrangements.

5. Identify those occupations or living arrangements that would be particularly unpleasant to your child.

(Overhead 15)

STUDENT PREFERENCE OR CHOICE SURVEY

1. The primary modes of communicating likes and dislikes.

2. How the child makes a selection when given a choice.

3. What kinds of choices the child has an opportunity to make.

4. How many opportunities per day the child has to make choices.

5. Related environmental conditions that the child prefers (e.g., likes to be alone or with a large group of people; or likes highly repetitive activities or non-repetitive activities).

6. The times of day the child is the most active and the most tired.

(Overhead 16)

LIFE AREAS

- Independent Living
- Work
- Recreation/Leisure
- Community Life
- Regular Education

(Overhead 17)

SUBENVIRONMENTS

1. Life Area: Independent living

Environment: Group home

Subenvironments: bathroom, bedroom, garage, kitchen, dining room, deck or patio, living room, basement

(Overhead 18)

SUBENVIRONMENTS

2. Life Area: Community life

Environment: Grocery store

Subenvironments: parking lot, entry, shopping areas by category (e.g., dairy or produce), checkout lanes

(Overhead 19)

SUBENVIRONMENTS

3. Life Area: Work

Environment: Hospital

Subenvironments: parking lot, entry, employee lounge, cafeteria and lunchroom, janitor's area, hallways, assigned patients' rooms, employee bathroom, employee locker room

(Overhead 20)

SUBENVIRONMENTS

4. Life Area: Recreation/leisure

Environment: Bowling alley

Subenvironments: parking lot, entry, locker area, shoe counter, ball rack, lanes, snack bar, bathroom

(Overhead 21)

SUBENVIRONMENTS

5. Life Area: Regular education

Environment: Homeroom

Subenvironments: doorway, desk area, blackboard

(Overhead 22)

ACTIVITIES

1. Life Area: Independent living

   Environment: Student's home

   Subenvironment: Bathroom

   Activity: Brush teeth

(Overhead 23)

ACTIVITIES

2. Life Area: Community life

Environment: Post office

Subenvironment: Counter

Activity: Purchase stamps

(Overhead 24)

ACTIVITIES

3. Life Area: Work

Environment: Lawn & Garden
Center

Subenvironment: Greenhouse

Activity: Water plants

(Overhead 25)

ACTIVITIES

4. Life Area: Recreation/leisure

Environment: Bowling alley

Subenvironment: Shoe counter

Activity: Rent bowling shoes

(Overhead 26)

ACTIVITIES

5. Life Area: Regular education

Environment: Homeroom

Subenvironment: Doorway

Activity: Enter classroom

(Overhead 27)

SKILL SEQUENCES

1. Life Area: Independent living

   Environment: Apartment

   Subenvironment: Bedroom

   Activity: Dust

   Skills:

   a. Look for cleaning materials.
   b. Obtain cleaning materials.
   c. Prepare cleaning materials.
   d. Dust dresser.
   e. Check to see if area is dust free.
   f. Move cleaning materials to the next piece of furniture (repeat steps d & e).
   g. Put cleaning materials away.

(Overhead 28)

SKILL SEQUENCES

2. Life Area: Community life

Environment: Bank

Subenvironment: Safety deposit box area

Activity: Place contents in a safety deposit box

Skills:

a. Request assistance.
b. Follow bank officer.
c. Sign signature sheet.
d. Remove keys.
e. Locate box.
f. Open box.
g. Place contents in safety deposit box.
h. Lock box.
i. Leave area.

(Overhead 29)

SKILL SEQUENCES

3. Life Area: Work

Environment: Theater

Subenvironment: Seating area

Activity: Wash seats

Skills:

a. Obtain equipment.
b. Prepare for cleaning.
c. Wash seat.
d. Check to see if seat is dirt free.
e. Move to next seat (repeat c & d).
f. Put materials away.

(Overhead 30)

SKILL SEQUENCES

4. Life Area: Recreation/leisure

Environment: Restaurant

Subenvironment: Cafeteria line

Activity: Order food

Skills:

a. Locate tray and utensils.
b. Push tray.
c. Scan choices.
d. Make selection.
e. Request entree.
f. Reach for food.
g. Move tray to desserts (repeat c-f).
h. Obtain receipt.
i. Pay for food.

(Overhead 31)

SKILL SEQUENCES

5. Life Area: Regular education

Environment: Art classroom

Subenvironment: Sink area

Activity: Wash paintbrushes

Skills:

a. Locate sink.
b. Take paintbrushes to sink.
c. Turn on faucet.
d. Adjust temperature.
e. Place paintbrushes under stream of water.
f. Rotate brushes from side to side until they are clean.
g. Turn off water.
h. Shake excess water off brushes.
i. Dry brushes with paper towels.
j. Put brushes away.

(Overhead 32)

STEPS TO CONDUCT A DISCREPANCY ANALYSIS

1. Determine what activities to teach.
2. Identify important skills necessary to perform the activity.
3. Determine present needs and abilities of the student with dual sensory and multiple impairments.
4. Determine skills that the student can acquire by partial participation.
5. Determine individual adaptations.

(Overhead 33)

TYPES OF ADAPTATIONS

1. Physical and Prosthetic Devices
2. Altering Skill Sequences
3. Altering Rules
4. Providing Instructional Prompts
5. Altering Environmental Conditions
6. Altering Social and Attitudinal Factors

(Overhead 34)

CONSIDERATIONS FOR SELECTING ACTIVITIES

Activities that include properties of:

- movement (e.g., vestibular),
- physical contact (e.g., tactile), and/or
- other sensory stimulation (e.g., gustatory and olfactory)

are appropriate for students who have no functional vision or hearing.

(Overhead 35)

ADDITIONAL INFORMAL ASSESSMENT INFORMATION FOR SELECTING SKILLS

(Gee, 1989)

A. How does the skill affect the student's quality of life?

B. How does the student receive information (e.g., residual vision, residual hearing, or tactually)?

C. What method(s) does the student use to physically demonstrate participation?

D. How can the student immediately participate in the activity?

E. Will the skill allow the student to initiate control?

F. Will the skill affect the student's ability to interact with others?

G. Does the skill require reciprocal participation?

H. What health constraints will directly affect student performance?

(Overhead 36)

CONTENT OUTLINE

1. Preliminary Planning Strategies

2. Liability Issues

3. Transportation

4. Staff and Student Ratios

5. Classroom Schedules

6. Funding

(Overhead 37)

RESPONSIBILITIES OF COMMITTEE MEMBERS

a. Developing policies and procedures.

b. Conducting planning activities for program implementation (e.g., inservice training for staff and parent meetings).

c. Conducting on-going program evaluation.

d. Collaborating with members of existing curriculum development committees.

(Overhead 38)

STRATEGIES TO FACILITATE IMPLEMENTATION OF A COMMUNITY-BASED PROGRAM

1. Obtaining support from administrators.

2. Obtaining parent support.

3. Developing plans for maintaining an acceptable staff-to-student ratio, transportation, and insurance coverage.

4. Obtaining funds for transportation costs.

5. Training regular and special education staff (Lyon et al., 1989).

(Overhead 39)

LIABILITY SAFEGUARDS

1. Adopting a district wide policy with approval from legal advisors and members of the board of education.
2. Contacting other districts to determine the extent of insurance coverage needed.
3. Determining if insurance coverage for field trips also will suffice for conducting instruction in community environments.
4. Obtaining parental permission.
5. Developing emergency procedures including student identification.
6. Providing insurance coverage for volunteers or student teachers.

(Overhead 40)

TRANSPORTATION

1. Using driver education vehicles through career education departments.
2. Purchasing a vehicle through a grant or by a community service organization.
3. Conducting fund-raising events or securing donations from a local car dealership.
4. Accessing vehicles from other agencies.
5. Scheduling student drop-offs and pick-ups at community sites.
6. Using district buses or vans.
7. Using staff cars.
8. Using vehicles of parents or volunteers.

(Overhead 41)

STAFF AND STUDENT RATIOS

REMEMBER

1. Keep staff-to-student ratios low (1:2 or 1:3).

2. Staff-to-student ratios should never exceed one staff member-to-four students.

(Overhead 42)

STRATEGIES FOR STAFF-TO-STUDENT RATIOS

1. Using a cooperative or team teaching approach.

2. Using related services or support personnel.

3. Using volunteers or student teachers.

4. Having paraprofessionals conduct training programs within the same environment or in close proximity to the certified teacher.

5. Grouping students heterogeneously.

(Overhead 43)

DESIGNING CLASSROOM SCHEDULES

1. Include activities listed on each student's IEP.

2. Schedule group activities.

3. Schedule activities that are the least flexible.

4. Schedule activities that are more flexible.

5. Schedule activities within naturally occurring routines.

6. Assign staff and transportation vehicles for each activity.

(Overhead 44)

STRATEGIES FOR FUNDING

1. Readjust budgetary line items.
2. Use money allocated for career education.
3. Open purchasing accounts with businesses accessed by students.
4. Find out if there is a reduced fare for utilizing public facilities or transportation.
5. Conduct fund raising activities.
6. Secure grants.
7. Request money from parent organizations.
8. Parent contributions to open bank accounts.
9. Accept contributions.
10. Use school lunch money to purchase food at the grocery store or to eat at a local restaurant or a cafeteria at a vocational training site.

(Overhead 45)

Appendix B

Handouts

SUMMARY OF CURRICULUM MODELS

Developmental Curriculum

- Based upon growth and development of non-disabled children.
- Domains typically include communication, motor, cognition, sensory, social/emotional, self help, and vocational.
- Progression is based on acquisition of skills in a sequence.
- Instructional skills and materials are based on developmental age.

Benefits

- Covers a large number of skills systematically.
- Helps target areas for additional assessment.
- Divides skills into component parts.
- Used to compare early development.

Limitations

- Follows developmental sequence of a non-disabled child.
- Focuses on form rather than function of the skill.
- Materials and skills often are not meaningful.

Functional Curriculum

- Instruction based on current and future needs of the student.
- Skills are taught across the five life areas: independent living, work, recreation/leisure, regular education, and community life.
- Adaptations are developed to increase participation in activities.
- Instructional skills and materials are based on chronological age.

Benefits

- Uses extensive parental and student input.
- Content highly individualized.
- "Top-down" rather than "bottom-up" model.
- Skill sequences are relevant and meaningful.

Limitations

- Skills may be selected that are beyond the student's abilities.
- Time consuming and complex scheduling.
- No guidance as to what to teach first.

(Handout 1)

PARENT INVENTORY OF CURRENT AND FUTURE ENVIRONMENTS

Student's Name: ______________________ Date: ______________________

Person(s) Interviewed: ________________ Relationship to Student: ______________________

Interviewer (if applicable): ____

I. Life Areas

A. Independent Living

1. Where do you want your son or daughter to live within the next five years?

2. Are there any residential options that would be unpleasant to your son or daughter?
Yes ____ No _____ If so, what are they?

3. Are there any residential options or settings that your son or daughter would enjoy?
Yes _____ No _____ If so, what are they?

4. Are there any specific considerations or concerns that you feel your son or daughter needs with regard to future residential options? (This also includes if you plan on your son or daughter remaining in your home.) Yes _____ No _____ If so, what are they?

(Handout 2-p. 1)

5. Have you considered any residential options? Yes _____ No _____ If so, what are they?

6. Name the independent living activities in which your son or daughter currently participates, mark (X) the level of assistance required for participation, and rank (1, 2, 3) three activities that you feel would increase your son or daughter's level of independence. You may want to use some of the following activities.

	Inde-pendent	Assist-ance	Does Not Participate	Rank
a.				
b.				
c.				
d.				
e.				
f.				
g.				
h.				

Other:

Independent Living Activities

1. Indicates toileting needs
2. Toileting
3. Eating or drinking
4. Grooms self (hair care, brushes teeth, applies deodorant, bathing)
5. Selects own clothing
6. Dresses self
7. Indicates if he or she wants to be different location
8. Transfers in and out of wheelchair
9. Folds clothes
10. Puts clothes away
11. Puts clothes in hamper
12. Makes own drink or sandwiches
13. Prepares lunch for work or school
14. Gets own snack
15. Sets and clears table
16. Puts groceries away
17. Selects items for meals
18. Dusts furniture
19. Cleans room
20. Mops or sweeps floor repositioned or placed in a
21. Makes bed
22. Empties trash
23. Waters plants
24. Mends clothes
25. Irons clothes
26. Washes or dries clothes

B. Work

1. What job would you like your son or daughter to have?

2. Where would you like him or her to work?

3. Are there any vocational training options that you would like him or her to attend?
Yes _____ No _____ If so, what are they?

4. Are there any jobs (including vocational training programs) that your son or daughter would enjoy? Yes _____ No _____ If so, what are they?

5. Are there any jobs (including vocational training programs) that would be particularly unpleasant to your son or daughter? Yes _____ No _____ If so, what are they?

6. Are there any specific considerations or concerns that you feel your son or daughter needs with regard to jobs or vocational training options? Yes _____ No _____ If so, what are they?

7. Have you considered any jobs or vocational training options? Yes _____ No _____ If so, what are they?

8. Name the work activities in which your son or daughter currently participates, mark (X) the level of assistance required for participation, and rank (1, 2, 3) three activities that you feel would increase your son or daughter's level of independence. You may want to use some of the following activities.

	Independent	Assistance	Does Not Participate	Rank
a. ____________	______	______	______	____
b. ____________	______	______	______	____
c. ____________	______	______	______	____
d. ____________	______	______	______	____
e. ____________	______	______	______	____
f. ____________	______	______	______	____
g. ____________	______	______	______	____
h. ____________	______	______	______	____

Other:

Work Activities

1. Sorts
2. Matches
3. Assembles
4. Packages
5. Folds
6. Observes break time
7. Arrives and leaves work on time
8. Obtains work materials
9. Puts work materials away
10. Leaves work area neat
11. Uses time clock
12. Attends to task with minimal distractions
13. Performs farm chores
14. Obtains work materials
15. Follows verbal instructions
16. Follows job picture sequence
17. Interacts with co-workers appropriately
18. Receives corrections from supervisor without disruption
19. Self-corrects errors

C. Community Life

1. In which community activities would you like your son or daughter to participate?

2. Are there any community activities that your son or daughter particularly enjoys?
Yes _____ No _____ If so, what are they?

3. Are there any community activities that would be particularly unpleasant to your son or daughter? Yes _____ No _____ If so, what are they?

4. Are there any particular concerns or considerations that you feel your son or daughter needs with regard to community activities? Yes _____ No _____ If so, what are they?

5. Name community activities in which your family and your son or daughter currently participates, mark (X) the level of assistance required for participation, and rank (1, 2, 3) three activities that you feel would increase your son/daughter's level of independence. You may want to use some of the following activities.

	Activity	Name of Facility	Independent	Assistance	Does Not Participate	Rank
a.						
b.						
c.						
d.						
e.						
f.						
g.						
h.						

Other:

Community Life Activities

1. Selects clothing items at store
2. Makes purchases
3. Uses public phone
4. Makes selections at grocery store
5. Makes grocery list
6. Selects account for money to be deposited (checking/savings)
7. Writes checks
8. Uses money card
9. Places letters in mailbox
10. Mails packages
11. Attends church
12. Uses public transportation
13. Uses public restrooms
14. Cooperates with barber or hairdresser
15. Cooperates with doctor or dentist
16. Uses coin operated washers or dryers
17. Makes selection at library
18. Looks at pictures or books at library
19. Pays for public transportation
20. Makes selection from pop machines

D. Recreation/Leisure

1. How would you like your son or daughter to spend his or her free time? (This includes both indoor and outdoor activities.)

2. Are there any particular activities that your son or daughter enjoys? Yes _____ No _____
If so, what are they?

3. Are there any particular activities that are unpleasant to your son or daughter?
Yes _____ No _____ If so, what are they?

4. Are there any specific concerns or considerations that you feel your son or daughter needs with regard to recreation/leisure options? Yes _____ No _____ If so, what are they?

5. Name recreational/leisure activities in which your family and your son/daughter currently participates, mark (X) the level of assistance required for participation, and rank (1, 2, 3) three activities that you feel would increase your son or daughter's level of independence. (This includes both indoor and outdoor activities.) You may want to use some of the following activities.

	Activity	Indoor/ Outdoor	Name of Facility	Independent	Assistance	Does Not Participate	Rank
a.							
b.							
c.							
d.							
e.							
f.							
g.							
h.							

Other:

Recreation/Leisure Activities

1. Swimming
2. Bowling
3. Movies, theater, concerts
4. Uses equipment at parks
5. Picnics
6. Walks
7. Track (running, jogging, or softball throw)
8. Rollerskates (one or two skates)
9. Dances
10. Parties
11. Car rides
12. Participates in family vacations
13. Camping
14. Fishing
15. Boating
16. Watches sporting events
17. Participates in sporting events
18. Rides horses
19. Woodworking
20. Painting or drawing
21. Selects music
22. Listens to music
23. Crafts
24. Collects items or objects
25. Computer games
26. TV
27. Video games at arcades
28. Selects items at restaurants
29. Plays miniature golf
30. Water slides
31. Zoo
32. Sings in choir
33. Visits are galleries or museums
34. Plays musical instrument
35. Plays table games
36. Photography
37. Attends exercise class (e.g., jazzercise or aerobics)
38. Visits friends and neighbors

E. Regular Education

1. In what regular education activities would you like your son or daughter to participate? (This includes extracurricular activities.)

2. Are there any particular regular education activities your son or daughter enjoys? Yes_____ No_____ If so, what are they?

3. Are there any particular regular education activities that are unpleasant to your son or daughter? Yes_____ No_____ If so, what are they?

4. Are there any specific concerns or considerations that you feel your son/daughter needs with regard to regular education activities? Yes_____ No_____ If so, what are they?

5. Name the regular education activities in which your son or daughter currently participates, mark (X) the level of assistance required for participation, and rank (1,2,3) the activities that you feel would increase your son's or daughter's level on independence. You may want to use some of the following activities.

	Activity	Grade Level	Independent	Assistance	Does Not Participate	Rank
a.						
b.						
c.						
d.						
e.						
f.						
g.						
h.						

Other:

Regular Education

1. Reading
2. Math
3. Science
4. Social Studies
5. Handwriting
6. Art
7. Music
8. Library
9. PE
10. Homeroom
11. Home economics
12. Foreign language
13. Theater
14. Woodshop
15. Automotive technology
16. Orchestra
17. Choir
18. Typing
19. Shorthand
20. Accounting
21. Journalism
22. Metal shop
23. Agricultural science
24. Speech (Forensics)
25. Debate
26. Psychology
27. Sociology
28. Sports (please list)
29. Clubs (please list)
30. Cheerleading
31. Drill Team
32. Flag Team
33. Student Government
34. Scouts (please list)
35. Yearbook
36. Newspaper
37. Mascot

Adapted from: Turnbull, A. P., Brotherson, M. J., Bronicki, G. J., Houghton, J., Roeder-Gordon, C., & Summers, J. A. (1985). *How to plan for my child's adult future: A three-part process to future planning.* Lawrence: University of Kansas Affiliated Facility, Bureau of Child Research.

Student Preference/Choice Survey

Student's Name: ______________________ Date: ______________________

Surveyor's Name: ______________________ Relationship to Student: ____________

Person(s) Interviewed (if applicable): ______________________________

1. How does the student indicate likes and dislikes? (You may check more than one behavior if it applies.)

		Likes	Dislikes			Likes	Dislikes
a.	Laughs	____	____	i.	Points/reaches	____	____
b.	Cries	____	____	j.	Initiates action	____	____
c.	Facial Expression	____	____	k.	Vocalizes	____	____
d.	Screams	____	____	l.	Gestures	____	____
e.	Tantrums	____	____	m.	Signs	____	____
f.	Looks at people	____	____	n.	Technology	____	____
g.	Looks at objects	____	____		Switch(es):		
h.	Moves body	____	____		(list type)	________	

Other:

2. How does the student generally indicate preferences or choices when given the choice between two or more activities or foods?

3. What types of choices are comfortable for the student to make?

4. What types of choices are uncomfortable for the student to make?

5. What are the student's three most favored activities? (These can be either instructional or recreational activities.)

6. What are the student's three least favored activities? (These can be either instructional or recreational activities.)

7. Does the student have preferences (regardless of need) for:

_____ learning specialist
_____ speech therapy
_____ transportation
_____ positioning
_____ physical therapy
_____ psychological/counseling services
_____ orientation & mobility
_____ vision specialist
_____ occupational therapy
_____ dietary services
_____ medical services
_____ audiology
_____ other: ______________________________
(specify)

8. What time of day does the student prefer to be active?

9. What time of day does the student prefer to relax?

10. Who does the student prefer to participate with during educational activities? (Staff?)

11. Who does the student prefer to participate with during educational activities? (Other students, friends?)

12. Generally, the student prefers: (check the appropriate responses)

a. Temperature: _____hot; _____ cold; _____ warm.

b. Taste: _____ sweet; _____ sour; _____ spicy; _____ bland.

c. Lights: _____ bright; _____ dark; _____ dull; _____ natural light; _____ artificial light.

d. Positioning: _____ sidelying; _____ prone; _____ supine; _____ supported sitting; _____ supported kneeling; _____ sitting; _____ standing.

Favorite positions to participate during activities (please list)

Favorite positions for sleeping (please list)

Adaptive devices used to obtain favorite position (please list)

e. Mobility: _____ crawling; _____ walking; _____ walker; _____ crutches; _____ wheelchair; _____ travel chair.

f. Sounds: _____ loud; _____ soft; _____ moderate; _____ steady state noise (e.g., fans or vacuum cleaner); _____environmental; _____ artificial.

g. Textures (material): _____ rough; _____ smooth; _____ hard; _____ soft; _____ squishy; _____ slimy; _____fuzzy.

h. Textures (food): _____ pureed; _____ semi-soft; _____ bite-sized.

Favorite foods (please list)

i. Drinks: _____ thick in consistency; _____ thin in consistency; _____ carbonated; _____ noncarbonated.

Favorite drinks (please list)

j. Environment: _____ outdoors; _____ indoors; _____ wet; _____ dry; _____ airy.

k. Media: _____ colorful; _____ black/white; __ __ large print; _____ neutral: _____ high contrast; _____ low contrast.

Favorite colors (please list)

l. Communication: _____ verbalizes (expressive speech); _____ vocalizes; _____ signs; _____ gestures; _____ communication board; _____ computer; _____ head stick; _____ technological switch; _____ other (please specify).

m. Music: _____ hard rock: _____ classical; _____ jazz; _____ pop; _____ country; _____ folk rock; _____ folk music; _____ acid rock; _____ rhythm & blues; _____ rock & roll; _____ new wave; _____ blues; _____ blue grass; _____ industrial.

Favorite songs (please list)

Favorite instruments (please list)

n. TV: _____ family shows; _____ police and detective shows; _____ medical shows; _____ news; _____ comedies; _____ talk shows; _____ computer games; _____ game shows; _____ movies; _____ sitcoms; _____ variety shows; _____ sports events.

Favorite TV shows (please list)

Favorite computer games (please list)

o. Involvement
_____ activities of fast pace;
_____ activities of moderate pace;
_____ activities of slow pace.

p. Engagement:
_____ highly repetitive activities;
_____ moderately repetitive activities
_____ nonrepetitive activities.

q. Activities in environmental activities: _____ lots of action;
_____ moderate degree of action;
_____ action is limited.

r. Competition: _____ in highly competitive situations;
_____ moderately competitive situations;
_____ noncompetitive situations.

s. Structure: _____ in highly structured situations;
_____ moderately structured situations;
_____ loosely structured situations.

t. Familiarity: _____ in unfamiliar or new surroundings;
_____ in familiar surroundings;
_____ familiar or unfamiliar surroundings do not matter.

u. Visual stimulation: _____ in highly visually stimulating environments;
_____ in moderately visually stimulating environments;
_____ in low visually stimulating environments.

v. Auditory stimulation: _____ in noisy environments;
_____ in moderately noisy environments;
_____ in quiet environments.

w. Participation: _____ alone; _____ with 1 other person; _____ with small group;
_____ with large group.

x. Activity Level: _____ very active; _____ moderately active; _____ relaxed.

y. Dependency: _____ independent; _____ supervised; _____ dependent.

z. Peers - Age Groups: _____ with age peers; _____ with persons older;
_____ with persons younger.

aa. Peers - Sex: _____ members of same sex; _____ members of opposite sex;
_____ members of both sexes.

bb. Attention: _____ center of attention; _____ one of the crowd; _____ seen but not heard; ____ isolated.

cc. Surfaces: _____ high glare; ____ non-glare; _____ glare does not matter.

dd. Materials: _____ high contrast; _____ low contrast; _____ contrast does not matter.

Adapted from: Turnbull, A. P., Brotherson, M. J., Bronicki, G. J., Houghton, J., Roeder-Gordon, C., & Summers, J. A. (1985). *How to plan for my child's adult future: A three-part process to future planning.* Lawrence: University of Kansas Affiliated Facility, Bureau of Child Research.

DISCREPANCY ANALYSIS

EXAMPLE 1

Environment: 3rd National Bank
Subenvironment: Entrance
Activity: Enters Bank

Ecological Inventory for a Nondisabled Person		Discrepancy Analysis for a Person with Multiple Impairments	Proposed Adaptations
February 10, 1990		February 26, 1990	February 28, 1990
1. Locates appropriate door	-	1. Student used sighted guide to find "in" door.	1. Cane travel will be targeted for instruction. Student will be expected to perform the skill independently after eight weeks.
2. Pushes door open.	+	2. Student performed this skills independently.	2. None. Student was able to perform skill independently.
3. Walks through door.	-	3. Student used sighted guide to walk through door.	3. Cane travel will be targeted for instruction. Student will be expected to be independent within eight weeks.
4. Walks to teller's window.	-	4. Student used sighted guide.	4. Cane travel will be targeted for instruction. Student will be expected to be independent within eight weeks.

(Handout 4)

DISCREPANCY ANALYSIS

EXAMPLE 2

Environment: 3rd National Bank
Subenvironment: Teller's Window
Activity: Requests Change

Ecological Inventory for a Nondisabled Person		Discrepancy Analysis for a Person with Multiple Impairments	Proposed Adaptations
February 10, 1989		February 26, 1989	February 28, 1989
1. Walks to teller's window.	-	1. Physical prompt to walk with walker.	1. Walker. Will be targeted for instruction. Student expected to be independent within 16 weeks.
2. Removes wallet.	+	2. Student performed skill independently.	2. None. Student was able to perform skill independently.
3. Requests change for dollar bill.	-	3. Student does not make verbal request.	3. Steps 3 and 4 will change so student will give teller an open wallet that contains a communication card.
4. Gives wallet to teller.	+	4. Extends arm independently.	4. This will become step 3. A communication card will be used.
5. Accepts change.	+/-	5. Extends arm to accept change; does not count change.	5. Student will use "trust me" system instead of counting change.
6. Puts wallet away.	-	6. Physical prompt to put wallet away.	6. Physical prompt used. Student expected to be independent within eight weeks.
7. Leaves counter.	-	7. Physical prompt to walk with walker.	7. Walker. Will be targeted for instruction. Student expected to be independent within 16 weeks.

(Handout 5)

SELECTING ACTIVITIES FOR INSTRUCTION

Student: ______________________________ Date: ____________________

List activities in each life area that were identified by parents, students, and staff, in the appropriate space provided. Rate each question for each activity by recording either 3 (High); 2 (Medium); 1 (Low); or NA (Non-Applicable). Total the ratings for each activity. Rank order activities within each life area.

	Independent Living					Recreation/ Leisure					Work					Community					Regular Education				
Activities																									
1. Is it a parent preference?																									
2. Is it a student preference?																									
3. Is it a staff preference?																									
4. Could this be taught using age-appropriate materials and environments?																									
5. Does it allow the caregiver's life to be better or easier?																									
6. Does it allow the student to become more independent?																									
7. Has a high probability of occurrence in: a. multiple environments? b. Single environments?																									
8. Has a high probability of being used in: a. present environments																									
b. future environments																									

	Independent Living					Recreation/ Leisure					Work					Community					Regular Education				
9. Expands the number of environments in which the student participates?																									
10. Has a high probability of being acquired given the amount of instructional time?																									
11. Has a high probability of student's participation if appropriate adaptations can be developed?																									
12. Increases interactions with: a. nondisabled peers?																									
b. nondisabled environments?																									
13. Does the activity contain the following properties: a. tactile?																									
b. auditory?																									
c. olfactory?																									
d. gustatory?																									
e. vestibular?																									
TOTAL																									
RANK																									

SAMPLE SKILL SEQUENCE

Section		Skill	Source
Preparation	1.	Respond to object for cue for "working out" (receptively) by selecting if from the appropriate cube of the activity shelf.	SLP
	2.	Trail from classroom to locker room with nondisabled peer.	O&M Instructor; Peer
	3.	Change into sweat pants and tee-shirt.	OT, parents, & teacher (based on an adaptive behavior scale)
	4.	Store school clothes in locker.	Teacher (based on both a Piagetian scale and an adaptive behavior scale)
	5.	Route travel from locker room to gym with nondisabled peer.	O&M Instructor; Peer
Execution	6.	Seat self on first piece of equipment.	O&M Instructor (orientation skill) and PT designed sitting strategy based on tight hip flexors and internal rotation
	7.	Request "help" from nondis abled peer to check equipment for correct amount of weight and difficulty level.	SLP; Teacher; Peer
	8.	Use equipment and count repetitions.	OT; PT; Teacher
	9.	Route travel to first to second piece of equipment.	O&M Instructor
		(Steps 10-17 are repetitions of Steps 6-9 for two additional pieces of equipment.)	

(Handout 7- p. 1)

Termination	18. Route travel to locker room with nondisabled peer.	O&M Instructor;Peer
	19. Shower.	Parent; Teacher
	20. Change into school clothes.	Parents; Teacher (based on an adaptive behavior scale and a developmental assessment)
	21. Place soiled workout clothes into gym bag.	Parents; Teacher (based on an adaptive behavior scale and a developmental assessment)
	22. Place object (from activity shelf) in "finished box" located by locker to signal completion of gym.	Teacher; SLP
	23. Route travel to departure area of school building with nondisabled peer.	O&M Instructor; Peer

(Please note that the level of participation on each step varies as a function of the severity of each students' disabilities.)

COMMUNICATION SKILLS DEVELOPMENT

Service Provider Training Module

June Downing
University of Arizona

1990

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I. General Information-Overview

A. Service Provider Training Module

Communication Skills Development

B. Purpose of the Module

The purpose of this module is to assist teachers and related service providers (e.g., speech-language pathologists, physical therapists, and occupational therapists) in development of effective strategies to enhance communication skills of children and youth with dual sensory and multiple impairments. Lecture content and training activities included in this module contain information on nonsymbolic and symbolic communication skills, assessment techniques, and intervention strategies for enhancing communicative competence.

C. Intended Audience

This module is intended for persons who provide educational and related services to students with dual sensory and multiple impairments, such as educators, occupational therapists, physical therapists, speech-language pathologists, and orientation and mobility instructors. It is intended to be used with those individuals who have received undergraduate or graduate level training in education, special education, or a related service profession.

D. Levels of Training

Awareness and Knowledge/Skill Acquisition

E. Entry Level Skills or Prerequisites

Participants should be familiar with the theory and skills of applied behavior analysis (particularly reinforcement strategies), systematic instruction, and basic communication strategies used with students who have dual sensory and multiple impairments. Furthermore, participants should have previous work experience with these same students.

F. General Outcome Competencies

Participants will become aware of the following:

1. The importance of nonsymbolic communication for students.
2. Characteristics and types of behaviors that serve a communicative function.
3. The importance of using a transdisciplinary team approach for communication skills development.
4. The importance of assessing the communication skills of students in natural environments and functional activities.
5. Strategies to facilitate communication skills of students with dual sensory and multiple impairments.

G. Module Delivery Organization

1. Number of Lectures: 4
2. Amount of Time: Four lectures ranging from one to three hours each for a total of around seven hours. Additionally, several group activities and opportunities for discussion are included. The combination of lecture, group activities, and discussion results in a total training session length of approximately one and one-half days.
3. Materials and Equipment: The trainer should use overhead transparencies and handouts found in the Appendices. Additional resources, such as videotapes developed (or purchased) by the trainer may also be used to enhance delivery of the training content.

H. Special Instructions

The trainer should be sensitive when addressing disabling conditions of an individual by acknowledging the person first and the disability second. For example, the phrase, "students with dual sensory and multiple impairments" should be used rather than the phrase "severely multiply handicapped and deaf-blind students." The two terms, "deaf-blind" and "dual sensory impairments," are used interchangeably throughout the module.

II. Training Instructions

A. Trainer Preparation

It is recommended that the trainer review the suggested readings prior to the training session. The trainer should be familiar with the outline and content of the module and be able to relay the information using functional examples.

B. How to Deliver the Module

It is recommended that presentations include lectures, training activities, and discussion. Suggested training activities are listed under each content section. Trainers are encouraged to develop and use original resources to supplement their presentations.

C. Training Tips

Embedded within the text of the module are suggestions for ways in which the trainer can enhance attention, and learning. These suggestions are typed in bold-faced italics and enclosed in a special bracket. Here is an example.

Pause here and ask participants to share any questions they may have.

III. Content-Part I: Communication and Language

A. Module Delivery Organization

1. Lecture Number: 1

2. Amount of Time: One hour

3. Specific Outcome Competencies

   Participants will be able to:

   a. list basic assumptions about communication

   b. describe differences between communication and language

   c. identify characteristics of communication

   d. identify the types of communication

B. Content Overview Outline

1. Basic Assumptions about the Communication of Students with Dual Sensory and Multiple Impairments

2. Similarities and Differences between Communication and Language

3. Characteristics of Communication

4. Types of Communication

C. Suggested Readings for the Trainer

Sections of the content in the readings listed below served as the basics for the development of this module. The trainer should obtain these resources and master the content prior to delivering the module.

Bates, E. (1986). *Language and context: The acquisition and pragmatics.* Orlando: Academic Press.

Bloom, L. (1970). *Language development: Form and function in emerging grammars.* Cambridge: Massachusetts Institute of Technology Press.

Bloom, L., & Lahey, M. (1978). *Language development and language disorders.* New York: John Wiley & Sons.

Bruner, J. (1977). Early social interaction and language acquisition. In H. Schaffer (Ed.), *Studies in mother-infant interaction* (pp. 271-289). London: Academic Press.

Elliott, N. (1984). Communicative development from birth. *Western Journal of Speech Communication, 48*, 184-196.

Mirenda, P., Iacono, T., & Williams, R. (1990). Communication options for persons with severe and profound disabilities: State of the art and future directions. *Journal of the Association for Persons with Severe Handicaps, 15* (1), 3-21.

Murphy, C., & Messer, D. (1977). Mothers, infants, and pointing: A study of gesture. In H. Schaffer (Ed.), *Studies in mother-infant interaction* (pp. 325-354). London: Academic Press.

Newson, J. (1979). The growth in shared understanding between infant and caregiver. In M. Bullowa (Ed.), *Before speech: The beginning of interpersonal communication* (pp. 207-222). London: Cambridge University Press.

Reichle, J., & Keogh, W. (1986). Communication instruction for learners with severe handicaps: Some unresolved issues. In R. Horner, L. Meyer, & H. D. Fredericks (Eds.), *Education of learners with severe handicaps: Exemplary service strategies* (pp. 189-219). Baltimore: Paul H. Brookes.

Rogers-Warren, A., & Warren, S. (1984). The social basis of language and communication in severely handicapped preschoolers. *Topics in Early Childhood Special Education, 4*, 57-72.

Sugarman, S. (1984). The development of preverbal communication: Its contribution and limits in promoting the development of language. In R. Schiefelbusch & J. Pickar (Eds.), *The acquisition of communicative competence* (pp. 24-67). Baltimore: University Press.

D. Introduction to the Content, Part I

Introduce this session by announcing the title and displaying Overhead 1. Refer to it as you review topics with participants. You may want to say, "This session will cover language and communication for students with dual sensory and multiple impairments. Topics included in this session are:

1. ***Assumptions about communication***
2. ***Similarities and differences between communication and language***
3. ***Characteristics of communication***
4. ***Types of communication"***

E. Specific Content

1. Basic Assumptions about Communication

Display Overhead 2 as you discuss the assumptions about communication with participants.

Some of the assumptions about communication and communication intervention are:

a. All individuals communicate.

b. Communication allows students with dual sensory and multiple impairments to interact with their nondisabled peers to develop friendships.

c. Students with dual sensory impairments often exhibit greater communicative competence in familiar environments (e.g., their homes), as well as in life areas of home, school, community, recreation/leisure, and work.

d. Communication allows individuals to control their environments (e.g., make requests, or express refusal, express wants or needs, and answer or ask questions).

e. The only prerequisite for developing communication skills is having opportunities to communicate (Mirenda, Iacono, & Williams, 1990).

2. Similarities and Differences between Communication and Language

Display Overhead 3 as you discuss communication and language with participants.

a. Communication is the transmission and reception of a message between at least two individuals. It contains:

   i. content (i.e., something about which to talk)

   ii. form (i.e., a behavioral response)

   iii. function (i.e., a reason to interact)

b. Language is an abstract, arbitrary symbol system that is used in communication and involves more than one individual. Language, like communication, contains:

   i. content (i.e., semantics)

   ii. form (i.e., syntax)

   iii. function (i.e., pragmatics)

3. Characteristics of Communication

Display Overhead 4 as you review the characteristics of communication with participants.

Communication is a behavioral trait of all individuals, regardless of the severity of their disabling conditions. (In general, the greater the severity of the student's disability, the greater need for interpretive skills on the part of the communicative partner in order for communicative interaction to occur.)

Communication must assume some form to be recognizable. Any behavior can be considered to have communicative value whether it is intentional or unintentional. Students may use multiple forms of communication for receptive and expressive purposes. For example, a two year old girl utters "uh" and waves her arms in the air. Her father extends his arms to lift her while asking, "Do you want up?" In this situation, the father is responding to the little girl's vocalization ("uh") and arm movements (waving arms). Conversely, the father uses a more formal vocalization paired with arm movement (arm extension) to respond to her initiation.

Communication arises from some reason or function. Emphasis is often placed on the functions of requesting and rejecting. Increased emphasis should also be placed on other functions of communication, such as commenting, greeting, giving information, and directing others. There are numerous opportunities to practice and use communicative functions (other than requesting or rejecting) throughout the day. Activities, such as teaching students to use tactile communication books (e.g., object boards) or point to pictures provide opportunities for students to comment on their experiences.

Communication must contain content. Students should be encouraged to conduct conversations about places, activities, and materials with which they have experience.

Communication is a skill that is infused or embedded within all activities. It occurs continuously throughout each day.

4. Types of Communication

Display Overhead 5 as you review symbolic and nonsymbolic communication with participants.

a. Symbolic communication

Symbolic communication is used to convey messages through the use of abstract symbols, such as speech, sign, Braille, print, pictures, or Blissymbols. Symbolic communication is characterized by the use of symbols that represent objects, features, or actions. It is dependent on referents (e.g., the actual object, person, or action) to have meaning.

b. Nonsymbolic communication

Nonsymbolic communication is used to convey messages through observable behaviors, such as body movements, facial expressions, vocalizations, mime, object manipulation, and natural gestures. Nonsymbolic communication should be considered an acceptable and effective communication method. It is an efficient system when referents are physically present; however, it usually does not adequately represent more abstract communication content.

Distribute Handouts 1a, 1b, and 1c to participants. Have them review the information. Generate additional examples of form, content, and function as a large group.

c. Unintentional communication

Display Overhead 6 as you review unintentional communication with participants.

Unintentional communicative behaviors may be reflexive or accidental. They require an interpretive, interactive response from another individual to be considered communicative. For example, a six year old boy with a visual acuity estimated at 20/300, a bilateral conductive hearing loss of 60 dB, severe neuromuscular involvement, and who functions within the severe to profound range cognitively, may be placed in a sidelyer on the floor in his classroom. His teacher is busy arranging the placement of a microswitch so the student may activate a vibrating musical toy while she conducts a self care program with another student. The teacher notices out of the corner of her eye that the student's arm moved towards her. To encourage his response, the teacher re-establishes body orientation and says in a loud voice, "You don't like being left alone, huh?" She interpreted his arm movement as having meaning.

d. Intentional communication

Display Overhead 7 as you review intentional communication with participants.

Intentional communication occurs when a behavior is used to transmit a purposeful message to another person. For example, an 18 year old student yells and throws her work on the floor. Her supervisor responds, "It looks like you need a break." The supervisor then assists the student to retrieve the work items. After the work items are replaced, the student's supervisor models an appropriate way to ask for a break.

F. Training Activities

1. Have participants list some characteristics of communication that are included in their students' educational programs.

2. Have participants describe the different receptive and expressive communication modes used by their students.

IV. Content-Part II: Factors that Influence Language Development

A. Module Delivery Organization

1. Lecture Number: 2

2. Amount of Time: One and one-half to two hours

3. Specific Outcome Competencies

   Participants will be able to:

   a. identify factors that influence language development

   b. specify the importance of the student's early interaction within both physical and social environments

   c. give specific examples of how social interaction facilitates the development of communication

B. Content Overview Outlines

1. The Impact of Vision and Hearing Skills on Communication Development

2. The Importance of Physical and Social Interactions

C. Suggested Readings for the Trainer

Bakeman, R., & Brown, J. (1977). Behavioral dialogues: An approach to the assessment of mother-infant interaction. *Child Development, 48*, 195-203.

Bates, E., Benigni, L., Bretherton, I., Camaioni, L., & Volterra, V. (Eds.). (1979). *The emergence of symbols: Cognition and communication in infancy.* Orlando: Academic Press.

Brazelton, T., Koslowski, B., & Main, M. (1974). The origins of reciprocity: Early mother-infant interaction. In M. Lewis & L. Rosenblum (Eds.), *The effect of the infant on its caregiver* (pp. 49-77). New York: John Wiley & Sons.

Chapman, R. (1981). Mother-child interaction in the second year of life: Its role in language development. In R. Schiefelbusch & D. Bricker (Eds.), *Early language: Acquisition and intervention* (pp. 291-308). New Rochelle, NY: Cambridge University Press.

Goldberg, S. (1977). Social competence in infancy: A model of parent-infant interaction. *Merrill-Palmer Quarterly, 23*, 163-177.

Hayes, A. (1984). Interaction, engagement, and the origins and growth of communication: Some constructive concerns. In L. Feagans, C. Garvey, & R. Golinkoff (Eds.), *The origins and growth of communication* (pp.136-161). Norwood, NJ: Ablex Publishing.

Murphy, C., & Messer, D. (1977). Mothers, infants, and pointing: A study of gesture. In H. Schaffer (Eds.), *Studies in mother-infant interaction* (pp. 325-354). Troy, MO: Academic Press.

Schiefelbusch, R., & Pikar, J. (Eds.). (1984). *The acquisition of communicative competence.* New Rochelle, NY: Cambridge University Press.

Uzgiris, I. (Ed.). (1979). *Social interaction and communication during infancy: New directions for child development.* San Francisco: Jossey-Bass Inc.

Wilkes, E. (1981). A description of language development for parents. *Volta Review, 83*, 394-403.

D. Introduction to the Content, Part II

Introduce this session by announcing the title and displaying Overhead 8. Refer to it as you review topics with participants. You may want to say, "This session will cover factors that influence language development. Topics included in this session are:

1. ***The impact of vision and hearing skills on communication development***
2. ***The importance of physical and social interactions"***

E. Specific Content

1. The Impact of Vision and Hearing Skills on Communication Development

Display Overhead 9 as you discuss the following information with participants.

a. Vision helps the student:

   i. Acquire information about the world and beyond her immediate environment.

   ii. Receive input about potential topics of conversation.

   iii. Obtain a social partner's attention by eye contact and facial orientation.

Display Overhead 10 as you discuss the following information with participants.

b. Hearing skills help the student:

   i. Receive information about the environment.

   ii. Differentiate between social and physical sound sources.

   iii. Obtain information about potential topics of conversation.

2. The Importance of Physical and Social Interactions

   a. Physical interactions

Display Overhead 11 as you review the following information with participants.

Students acquire information about objects and object properties (e.g., tactile, kinesthetic, and auditory) while physically exploring their environments. Additionally, students learn how individuals interact with objects within these environments. For example, a four year old boy extends a broken toy plane to his sister. His sister assumes that her brother wants the plane put together because he gave the toy to her. She complies by fixing the plane for him. The communicative intent in this example probably is, "please fix the plane."

b. Social interactions

Display Overhead 12 while you review the following information with participants.

Bonding is the forming of early social interactions with significant others (usually mother and infant relationships). It is necessary for ensuring the infant's future efforts toward communication.

Sensitivity to early prelinguistic behavior establishes a basis for early social interactions with caregivers. Caregivers respond to their infants' early behaviors as if these behaviors were communicative. Increased responsiveness to their children often results in increased communicative efforts. For example, a toddler points at something viewed outside the window. Her father looks outside too and manually signs, "Dog. Look at the dog." This interaction reinforces the child's efforts and encourages future communicative behaviors.

Display Overhead 13 while you review the following information with participants.

Motivation for the initiation of social interactions can occur when caregivers and educators engage children in interactive turn-taking. Educators and caregivers maintain the interest of the children by engaging in exaggerated rhythmic speech, ritualized play, animated facial expressions, gestures, and movements during these interactions. Not only do these types of interactions maintain the children's interest, but they provide opportunities for more advanced communicative skills, such as expansion and elaboration.

Display Overhead 14 as you review the term "elaboration" with participants.

i. Elaboration. Elaboration is accepting children's expressive communication skills and adding to the communicative interaction while staying within the topic. For example, a seven year old boy is eating ice cream in the school cafeteria. When his bowl is empty, he tugs his teacher's sweater while pointing to the empty bowl. His teacher tactually signs in his hand, "You have finished your ice cream. You may have one more scoop. Would you like chocolate or vanilla?"

Display Overhead 15 as you review the term "expansion" with participants.

ii. Expansion. Expansion is accepting children's communicative skills while adding information that leads to a new topic. For example, a thirteen year old girl is participating in beeper ball with her nondisabled peers during PE class. A bell rings to indicate a change of classes. She waves her hand back and forth in the air. One of her classmates approaches her and tactually signs, "Beeper ball is over. We need to take showers and change our clothes. Where is your next class?"

F. Training Activities

1. Have participants learn how vision and hearing impairments effect their routine, everyday functioning by experiencing these impairments through simulators. Sensory simulators allow participants to experience a range of vision and hearing deficits. Have participants describe why activities, such as walking, going to the restroom, or performing a task were difficult and how their visual and hearing losses effected their ability to communicate.

2. Ask participants to generate examples of the use of expansion and elaboration in association with the following situations:
   a. A student is struggling to put his coat on prior to departing on a community-based training session

   b. A job coach observes that a student worker has failed to notice it is time for a coffee break

V. Content-Part III: Assessing Communication Skills

A. Module Delivery Organization

1. Lecture Number: 3

2. Amount of Time: One hour

3. Specific Outcome Competencies

   Participants will be able to:

   a. describe the goal of communication assessment

   b. identify different types of assessment instruments

   c. describe components of a functional assessment process

   d. discuss transdisciplinary team involvement with communication assessment

B. Content Overview Outline

1. Assessment Instruments

2. The Functional Assessment Process

3. Transdisciplinary Team Involvement

C. Suggested Readings for the Trainer

Beukelman, D., & Mirenda, P. (1988). Communication options for persons who cannot speak: Assessment and evaluation. In C. A. Coston (Ed.), *Proceedings of the national planners*

conference on assistive device service delivery (pp. 151-165). Washington, DC: The Association for the Advancement of Rehabilitation Technology.

Brown, L., Shiraga, B., Zanella, K., & Rogan, P. (1984). *The discrepancy analysis technique in programs for students with severe handicaps.* Madison: University of Wisconsin & Madison Metropolitan School District.

Coggins, T., & Carpenter, R. (1981). The communicative intentions inventory: A system for observing and coding children's early intentional communication. *Applied Psycholinguistics, 2,* 235-251.

Giangreco, M. (1986). Delivery of therapeutic services in special education programs for learners with severe handicaps. *Physical and Occupational Therapy in Pediatrics, 6,* 5-15.

Meyer, L., Reichle, J., McQuarter, R., Cole,D., Vandercook, T., Evans, I., Neel, R., & Kishi, G. (1985). *Assessment of social competence (ASC): A scale of social competence functions.* (Contract No. 300-82-0363). Minneapolis: University of Minnesota, Institute for the Education of Severely Handicapped Learners.

Nietupski, J., Schuetz, G.M., & Ockwood, L. (1980). The delivery of communication therapy services to severely handicapped students: A plan for change. *Journal of the Association for Persons with Severe Handicaps, 5,* 13-23.

Otis, M. (1983). *Nonverbal prelinguistic communication. A guide to communication levels in prelinguistic handicapped children.* Salem: Oregon State Department of Education.

Rowland, C. (1987). Perspectives on communication assessment. In M. Bullis, (Ed.), *Communication development in young children with deaf-blindness: Literature review III* (pp. 1-22). Monmouth, OR: Teaching Research.

Stillman, R., & Battle, C. (1985). *The Callier-Azusa Scale: Scales for the assessment of communicative abilities.* Dallas: University of Texas, Callier Center, & South Central Regional Center for Services to Deaf-Blind Children.

Stillman, R. & Battle, C. (1986). Developmental assessment of communicative abilities in the deaf-blind child. In D. Ellis (Ed.), *Sensory handicaps in mentally handicapped people* (pp.319-335). Austin, TX: Pro-Ed.

Stremel-Campbell, K., Clark-Guida, J., & Johnson-Dorn, N. (1984). *Communication assessment manual* (Contract No. 300-81-0411). Monmouth, OR: Teaching Research.

Yorkson, K., & Karlan, G. (1986). Assessment procedures. In S. Blackstone (Ed.), *Augmentative communication: An introduction*. Rockville, MD: American Speech, Language, & Hearing Association.

D. Introduction to the Content, Part III

Introduce this session by announcing the title and displaying Overhead 16. Refer to it as you review topics with participants. You may want to say, "This session will cover communication assessment. Topics included in this session are:

1. ***Assessment Instruments***
2. ***The functional assessment process***
3. ***Transdisciplinary team involvement"***

E. Specific Content

1. Assessment Instruments

Display Overhead 17 as you review the following information with participants.

The primary goal of communication assessment is to determine each student's communicative strengths and needs so that effective and efficient intervention programs can be developed. Information derived from communication assessments assist the educator in making decisions regarding:

Display Overhead 18 as you review the following information with participants.

a. the need for intervention

b. the student's progress

c. the effectiveness of the communication program

Standardized or formal assessment instruments have assigned developmental ages for specific observable behaviors. Most formal assessment instruments rely heavily on the student's use of motor, vision, hearing, and communication skills to obtain age equivalency scores. The primary advantage of using a formal communication assessment instrument is to obtain developmental information that may assist in selection of an adaptation, or in alteration of an instructional sequence.

There are several disadvantages to the use of formal assessment instruments for students who have dual sensory impairments. These are:

Display Overhead 19 as you review the following disadvantages with participants.

a. Information may be collected in situations that are isolated and out-of-context

b. They often require the use of chronologically age-inappropriate materials and activities which may not be motivating to students.

c. Information obtained from the assessment instruments may not be related to the development of communication programs.

2. The Functional Assessment Process

Display Overhead 20 as you review the following information with participants.

The functional assessment process generally is recommended for evaluating the communication skills of students who have dual sensory and multiple impairments. It provides information regarding:

a. the student's communication skills across the life areas of work, independent living, recreation/leisure, community life, and regular education

b. the number of opportunities the student has to communicate within the life areas

c. the number of partners with whom the student communicates in each life area

Display Overhead 21 as you review the following information with participants.

The functional assessment process begins by conducting a parent or caregiver inventory. Parent or caregiver information can be collected by:

a. interviewing family members regarding
    i. the number of family activities in which the student participates
    ii. how the student communicates during each activity
    iii. who primarily interacts with the student during each activity

b. conducting an observational analysis to record
    i. how the student communicates within familiar environments outside the educational setting
    ii. the number of activities in which the student participates
    iii. with whom the student communicates
    iv. the frequency of communicative interactions

Secondly, a communicative analysis is conducted in the natural environments of each life area (i.e., independent living, work, recreation/leisure, community life, and regular education). These environmental analyses assist service providers in identifying the communicative demands of specific activities within each subenvironment.

Display Overhead 22 while you review the following information with participants.

Finally, discrepancy analyses are conducted. Discrepancy analyses are outlines of activities that include communicative components. Data are collected to determine discrepancies between what communicative skills are required within activities and what communicative skills are demonstrated by individual students. Decisions regarding what communicative skills to teach and what adaptations are needed for individual students' to effectively communicate within activities are based on results from discrepancy analyses.

3. Transdisciplinary Team Involvement

All members of a transdisciplinary team (e.g., caregivers, physical therapists, orientation and mobility specialists, speech-language pathologists, special educators, psychologists, or vision itinerant teachers) are involved in aspects of assessment, development, and implementation of communication intervention programs. Team members share information with one another to develop appropriate communication strategies for individual students.

The communication assessment process should involve all members of the student's educational team. Briefly, each team member shares their skills and expertise to provide information related to the student's communication skills. For example, the parent and special educator can provide information related to environmental communication needs, the physical therapist can provide information related to certain body positions that encourage arm movement to access a communication device, the speech-language pathologist can provide information about the student's symbolic and nonsymbolic communication abilities, and the orientation and mobility specialist can provide information related to the student's visual requirements for developing a portable communication mode.

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F. Training Activities

1. Show the videotape, "Within Reach." Have participants observe the featured student and record his communicative behaviors. Ask participants to refer to Handout 2 and use it to complete a discrepancy analysis for the student featured on the videotape.

2. Have each participant identify a student with dual sensory and multiple impairments. Ask them to record the number of communicative opportunities that are available to the student. Have one or two participants present their results to the large group.

VI. Content-Part IV: Intervention Strategies

A. Module Delivery Organization

1. Lecture Number: 4

2. Amount of Time: Two and one-half to three hours

3. Specific Outcome Competencies

Participants will be able to:

a. identify the primary goal of communication intervention

b. describe several strategies to enhance the development of receptive and expressive communication skills

c. describe several strategies to enhance the development of unintentional and intentional communication skills

d. describe several strategies to enhance the development of social interaction skills

B. Content Overview Outline

1. The Goal of Communication Intervention

2. Strategies for Increasing Communication and Social Interaction Skills

C. Suggested Readings for the Trainer

Carlson, L., & Bricker, D. (1982). Diadic and contingent aspects of early communicative intervention. In D. Bricker (Ed.), *Intervention with at risk and handicapped infants: From*

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research to application (pp.291-308). Baltimore: University Press.

Clark, G., & Seifer, R. (1983). Facilitating mother-infant communication: A treatment model for high-risk and developmentally delayed infants. *Infant Mental Health Journal, 4*, 67-81.

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D. Introduction to the Content, Part IV

Introduce this session by announcing the title and displaying Overhead 23. Refer to it as you review topics with participants. You may want to say, "This session will cover communication intervention strategies. Topics included in this session are:

1. ***The goal of communication interventions***
2. ***Strategies for increasing communication and social interaction skills"***

E. Specific Content

1. The Goal of Communication Intervention

Display Overhead 24 as you review the following information with participants.

The ultimate goal of communication intervention is to assist individual student progression from unintentional (e.g., reflexive or accidental behaviors) to intentional communicative acts. Communication intervention should be designed to include age-appropriate and meaningful activities across settings within the life areas of work, community life, independent living, recreation/leisure, and regular education. Communication intervention should be designed in order to meet the student's current and future communication needs.

2. Strategies for Increasing Communication and Social Interaction Skills

Display Overhead 25 as you review the following information with participants.

Strategies for increasing communication skills may be categorized in the following way:

a. strategies to increase receptive and expressive communication

b. strategies to increase unintentional and intentional communication skills

c. strategies to increase social interaction skills

Display Overheads 26a and 26b as you review the following information with participants.

d. Some strategies for increasing the development of receptive and expressive communication repertoires include:

   i. Incorporate communication skills training into every aspect of the student's day in place of a traditional isolated therapy schedule (i.e., pull-out sessions scheduled at specified times during the school day).

ii. Target communication skills as specific steps within functional activities. Avoid developing instructional activities which require a stimulus-response paradigm. For example, the teacher and speech-language pathologist may develop a recreation/leisure activity for students who are seven to eight years old. Communication skills targeted for instruction within this activity include:

  - Each student follows verbal or signed directions for obtaining toys (e.g., receptive communication).
  - Each student taps a neighbor's shoulder to obtain attention prior to passing the toy (e.g., the communicative intent is, "your turn").
  - Each student hands a neighbor a toy (e.g., the communicative intent is, "here it is").
  - Each student has an opportunity to play with a neighbor (e.g., initiating and responding to communicative actions).
  - Each student follows verbal or signed directions for putting toys away (e.g., receptive communication).

iii. Create a need for students to communicate.

iv. Provide frequent opportunities for students to make choices. For example, create an opportunity for students to select an object or activity of their choice.

v. Provide novel stimulation within a consistent and expected routine. New and interesting stimulation can be added by;

  - altering the environment,
  - providing new materials, and
  - doing the unexpected.

vi. Always use the student's preferred communication modes (e.g., including augmentative communication devices) during interactions.

vii. Be aware that the student's communication modes may change during the course of a lifetime. For example, a student with Ushers Syndrome may begin to experience loss of peripheral vision during adolescence. As manifestations become more pronounced, the student will require different communication modes. When the student was young, American Sign Language, written words, and verbal expressions may have been used to communicate. As an adult, the student may need to use touch cues, tactile sign language systems, and Braille to receive and give information.

viii. Use natural reinforcers whenever possible. The result of any communicative act is best reinforced by fulfilling the communicative intent. For example, if the student points to the texture for "play" on his communication board, he should be reinforced immediately with play time instead of receiving an M & M for pointing to the texture, "play."

ix. Avoid cue dependency. Use a prompt hierarchy that avoids excessive prompting of the student. Fade more intrusive prompts to less intrusive prompts as the student's proficiency increases (e.g., from total physical manipulation fade to hand-over-hand, to lower arm, to elbow, to touch cue on shoulder.)

x. Give students ample time to respond to communicative interactions. "Wait" time, (e.g., up to five seconds) following a communicative initiation provides an opportunity for students to process the communicative requirements of an interaction.

Display Overhead 27 as you review the following information with participants.

e. Some strategies for increasing unintentional and intentional communication skills include:

   i. Accept any form of communication the student uses.

   ii. Reinforce multiple means of expressive communication from the student.

   iii. Reinforce interactive or potentially interactive behaviors during the school day. For example, every time a student with a limited response repertoire vocalizes the teacher should respond.

iv. Be consistent with daily routines, this will help the student anticipate events.

v. Respond to all of the student's behavior as if it has communicative intent.

Display Overhead 28 as you review the following information with participants.

f. Some strategies for increasing social interaction skills include:

i. Provide many different types of instructional groupings for students, such as

- small groups,
- large groups,
- 1:1, or
- peer tutors.

This will give students opportunities to experience different communication partners.

ii. Schedule activities that require sharing materials or turn-taking, such as making a snack or playing a game.

iii. Be sure to instruct nondisabled peers about how to communicate with students who have dual sensory and multiple impairments. Demonstrate the communication modes (e.g., tactile sign, textured communication board, or gestures) of individual students. Have nondisabled peers practice interacting with individual students using their communication modes both receptively and expressively.

iv. Teach the student and a nondisabled peer how initiate a communicative exchange, such as tapping the student's shoulder to get his attention, orienting to the correct body position (e.g., face-to-face), and reaching for the student's hand before delivering the message.

F. Training Activities

1. Have each of several participants provide a brief overview of one of their students to the large group. Have them include a daily schedule of activities and IEP objectives if possible. Review both objectives and activities. Discuss the number of communication intervention strategies

that could be included in the educational programs for their individual students.

2. Have participants identify different opportunities during the school day during which they could offer choices to their students. List a number of suggestions for offering choices to students on a blank overhead transparency.

VII. Sources for Additional Information

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465 South Lincoln Drive
Troy, MO 63379
Phone number: (314) 528-8110
Cost of book: $29.95

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465 South Lincoln Drive
Troy, MO 63379
Phone number: (314) 528-8110
Cost of book: $39.00

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Publication Sales
10801 Rockville Pike
Rockville, MD 20852
Phone number: (301) 897-5700
Cost of book: $22.50/members; $35.00/nonmembers

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Publisher's address: McMillan Publishing Company

Front and Brown Street
Riverside, NJ 08075
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Integrated Student Services
Attention: Publication Request
545 West Dayton Street
Madison, WI 53703
Phone number: (608) 266-6260
Cost of book: $10.00

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345 North Monmouth Avenue
Monmouth, OR 97361
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110 Midland Avenue

Port Chester, NY 10573
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Cost of book: $19.35

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8700 Shoal Creek Boulevard
Austin, TX 78758
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Cost of book: $26.00

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Publisher's address: Pro-Ed
8700 Shoal Creek Boulevard
Austin, TX 78758
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Cost of book: $39.50

Ford, A., Schnorr, R., Meyer, L., Davern, L., Black, J., & Dempsey, P. (1989). *The Syracuse community-referenced curriculum guide for students with moderate and severe disabilities.* Baltimore: Paul H. Brookes.

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P.O. Box 10624
Baltimore, MD 21285-0624
Phone number: (800) 638-3775
Cost of book: $47.00

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P.O. Box 10624
Baltimore, MD 21258-0624
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355 Chestnut Street
Norwood, NJ 07648
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900 J Street
Sacramento, CA 95814
Phone number: (916) 442-7391
Cost of book: $28.00

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Publisher's address: Charles E. Merrill Publishing Company
1936 East Wind Drive
Columbus, OH 43081
Phone number: (614) 890-1111
Cost of book: $31.95

Otis, M. (1983). *Nonverbal prelinguistic communication: A guide to communication levels in prelinguistic handicapped children.* Salem: Oregon State Department of Education.

Publisher's address: Oregon State Department of Education
Special Student Services Division
700 Pringle Parkway, SE
Salem, OR 97310
Phone number: (503) 378-2677
Cost of book: Free

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Publisher's address: Communication Skill Builders
3830 East Bellevue Road
P.O. Box 42050-P90
Tucson, AZ 85733

Phone number: (602) 323-7500
Cost of videotape: $69.00

Schaffer, H. (Ed.). (1977). *Studies in mother-infant interaction. Troy, MO: Academic Press.*

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465 South Lincoln Drive
Troy, MO 63379
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P.O. Box 10624
Baltimore, MD 21258-0624
Phone number: (800) 638-3775
Cost of book: $28.00

Stremel-Campbell, K., Clark-Guida, J., & Johnson-Dorn, N. (1984). *Communication placement assessment manual*. Monmouth, OR: Teaching Research.

Publisher's address: Teaching Research Publications
345 North Monmouth Avenue
Monmouth, OR 97361
Phone number: (503) 838-8817
Cost of book: $3.00

Teaching Research. (Producers). (1987). *Within reach: Getting to know people who are deaf-blind* [Videotape]. Monmouth, OR: Teaching Research.

Publisher's address: Teaching Research Publications
345 North Monmouth Avenue
Monmouth, OR 97361
Phone number: (503) 838-8817
Cost of videotape: $10.00

VIII. Evaluation Measures

A. Pre/Post Evaluation

Communication Skills Development:

Service Provider Training Module

Downing & Anketell

Name ______________________________ Pre______________

Date ______________________________ Post______________

# Points Possible: 13

Length of Time Allowed: 20 minutes

1. Identify the primary difference between language and communication. (2 pts.)

2. Give two examples of how vision and auditory skills facilitate the development of communication. (2 pts.)

3. What information is derived from communication assessments that assists the service provider in making program decisions? (3 pts.)

4. Identify three intervention strategies that are used to enhance the communication skills of students with dual sensory and multiple impairments. Provide one example for each strategy listed. (6 pts.)

B. Answer Key

1. Two points should be given for the correct answer under each area listed.

   a. Communication. Communication is the transmission and reception of a message between at least two individuals.

   b. Language. Language is an abstract, arbitrary system that is used in communication and involves more than one individual.

2. Two points should be given for any two correct answers under each area listed.

   a. Vision skills
      - i. Help the student acquire information about the world.
      - ii. Provide input about potential topics of conversation.
      - iii. Provide information beyond the immediate environment.
      - iv. Give the student the ability to obtain a social partner's attention.

   b. Auditory skills
      - i. Help the student receive information about the environment.
      - ii. Enables the student to differentiate between social and physical sound sources.
      - iii. Provide language input that includes information about potential topics of conversation.

3. One point should be given for each correct answer listed.

   a. Determining the need for intervention.
   b. Monitoring a student's progress.
   c. Determining the effectiveness of a communication program.

4. Two points should be given for each correct strategy and example listed by participants.

C. Participant Satisfaction Evaluation

A Series of Training Modules
on Educating Children and Youth
with Dual Sensory and Multiple Impairments

Participant Evaluation of Training

Communication Skills Development:
Service Provider Training Module

Trainer: ______________________________ Date of Training: ______________________________

Training Site: ____

Please read each of the following statements carefully and rate each statement using the following key:

1 = Strongly Disagree	(SD)	4 = Agree	(A)
2 = Disagree	(D)	5 = Strongly Agree	(SA)
3 = Undecided	(U)		

		(SD)	(D)	(U)	(A)	(SA)
1.	Overall, the content of this training met my expectations.	1	2	3	4	5
2.	I learned useful information about models, characteristics, and types of communication as a result of this training.	1	2	3	4	5
3.	I learned useful information about assessing communication as a result of this training.	1	2	3	4	5
4.	I learned useful information about how to enhance communication skills of students with dual sensory and multiple impairments as a result of this training.	1	2	3	4	5
5.	The training provided specific information that I can apply.	1	2	3	4	5
6.	The training content was applicable to my needs as a service provider.	1	2	3	4	5
7.	Materials available from this training were relevant and beneficial.	1	2	3	4	5
8.	The trainer demonstrated competency in the area of communication.	1	2	3	4	5
9.	The trainer communicated clearly and effectively.	1	2	3	4	5

		(SD)	(D)	(U)	(A)	(SA)
10.	The trainer was responsive to questions and needs of participants.	1	2	3	4	5
11.	The trainer encouraged active involvement by participants and was able to facilitate group discussions.	1	2	3	4	5
12.	The trainer was able to effectively present information through utilization of a multisensory approach (i.e., lecture, activities, discussion, overheads, handouts, readings, and videos).	1	2	3	4	5

13. Reflecting on these training activities, in what ways do you foresee implementing the training?

14. What are the strengths of this training?

15. What follow-up needs can you identify for yourself?

16. In what ways could these training activities have been improved?

Appendix A

Overhead Transparencies

CONTENT OUTLINE

1. Basic Assumptions about the Communication of Students with Dual Sensory and Multiple Impairments

2. Similarities and Differences between Communication and Language

3. Characteristics of Communication

4. Types of Communication

(Overhead 1)

BASIC ASSUMPTIONS ABOUT COMMUNICATION

a. All individuals communicate.

b. It allows students to interact with their nondisabled peers.

c. Students often demonstrate greater communicative competencies in familiar environments.

d. It allows individuals to control their environments.

e. The only prerequisite for developing communication skills is having opportunities to communicate (Mirenda, Iacono, & Williams, 1990).

(Overhead 2)

COMMUNICATION AND LANGUAGE

Communication

- is the transmission of a message between at least two individuals.

Language

- is an abstract, arbitrary symbol system that is used in communication and involves more than one individual.

(Overhead 3)

CHARACTERISTICS OF COMMUNICATION

- Is a behavioral trait of all individuals.

- Must assume some form to be recognizable.

- Arises from some reason or function.

- Must contain content.

- Is a skill that is infused within all activities.

(Overhead 4)

SYMBOLIC AND NONSYMBOLIC COMMUNICATION

Symbolic

- To convey messages through the use of abstract symbols.

Nonsymbolic

- To convey messages through the use of observable behaviors.

UNINTENTIONAL COMMUNICATION

- May be reflexive or accidental.

- Requires an interpretive, interactive response from another individual.

(Overhead 6)

INTENTIONAL COMMUNICATION

- A behavior is used to transmit a purposeful message to another person.

(Overhead 7)

CONTENT OUTLINE

1. The Impact of Vision and Hearing Skills on Communication Development

2. The Importance of Physical and Social Interactions

(Overhead 8)

VISION

i. Acquire information about the world.

ii. Receive input about potential topics of conversation.

iii. Obtain a social partner's attention by eye-contact and facial orientation.

HEARING

i. Receive information about the environment.

ii. Differentiate between social and physical sound sources.

iii. Obtain information about potential topics of conversation.

(Overhead 10)

PHYSICAL INTERACTIONS

- Students acquire information about objects and object properties.

- Students learn how individuals interact with objects.

SOCIAL INTERACTIONS

1. Bonding is necessary for ensuring future efforts toward communication.

2. Sensitivity to early prelinguistic behaviors establishes a basis for early social interactions.

3. Increased responsiveness to communicative behaviors often results in increased communicative efforts.

(Overhead 12)

MOTIVATION FOR SOCIAL INTERACTION

Maintain children's interest by:

- exaggerated rhythmic speech
- ritualized play
- animated facial expressions
- gestures
- movements

(Overhead 13)

ELABORATION

Elaboration is accepting children's expressive communication skills and adding to the communicative interactions while staying within the topic.

EXPANSION

Expansion is accepting children's communication skills while adding information that leads to a new topic

(Overhead 15)

CONTENT OUTLINE

1. Assessment Instruments

2. The Functional Assessment Process

3. Transdisciplinary Team Involvement

(Overhead 16)

GOAL OF COMMUNICATION ASSESSMENT

To determine each student's communicative strengths and needs so that efficient intervention programs can be developed.

(Overhead 17)

COMMUNICATION ASSESSMENT

Information obtained from communication assessments assist the educator in making decisions regarding;

a. the need for intervention,

b. the student's progress, and

c. the effectiveness of the communication program.

(Overhead 18)

DISADVANTAGES OF FORMAL COMMUNICATION ASSESSMENT INSTRUMENTS

a. Information may be collected in situations that are isolated and out-of-context.

b. They often require use of chronologically age-inappropriate materials and activities.

c. Information obtained from these assessments may not be related to the development of communication programs.

(Overhead 19)

FUNCTIONAL ASSESSMENT

This process provides information regarding:

a. the student's communication skills across all life areas;

b. the number of opportunities the student has to communicate within the life areas; and

c. the number of partners with whom the student communicates in each life area.

PARENT OR CAREGIVER INVENTORY INFORMATION

Information is collected by:

a. interviewing family members, and

b. conducting an observational analysis to record:

   i. how the student communicates within familiar environments,

   ii. the number of activities in which the student participates,

   iii. with whom the student communicates, and

   iv. the frequency of communicative interactions.

SAMPLE DISCREPANCY ANALYSIS

Student: Shelley

Age: 3

Environment: Preschool Building
Subenvironment: Classroom
Activity: Arrive at school with friends

Key: + Correct Response
- Incorrect Response

STEPS	STUDENT INVENTORY	DISCREPANCY ANALYSIS	TEACHING STRATEGIES
1. Greet adult/ peer	-	Responds to adult's/peer's greeting with a startle. No way to indicate greeting.	Assess for behaviors that are consistent and appear to be communicative.
2. Remove coat.	+/-	Cannot unzip coat independently. Partially pulls arms out of sleeves.	Place bauble on end of zipper for pulling.
3. Hang coat on hook.	-/+	Has difficulty locating hook. Attempts to place coat on hook.	Teach locating texture above hook and counting hooks. Assist in placing coat on hook.
4. Choose play activity.	-	Has no strategy to make choices.	Assess for behaviors that are consistent and appear to be communicative.
5. Greet peers in play area.	-	Does not show awareness of peers due to sensory abilities. Does not have a method to greet peers.	Assess for behaviors that are consistent and appear to be communicative.

(Overhead 22)

CONTENT OUTLINE

1. The Goal of Communication Intervention

2. Strategies for Increasing Communication and Social Interaction Skills

(Overhead 23)

THE GOAL OF COMMUNICATION INTERVENTION

To assist individual student progression from unintentional to intentional communicative acts.

(Overhead 24)

STRATEGIES FOR INCREASING COMMUNICATION SKILLS

A. Strategies for increasing the development of receptive and expressive communication repertoires

B. Strategies for increasing unintentional and intentional communication skills

C. Strategies for increasing social interaction skills

(Overhead 25)

STRATEGIES FOR INCREASING THE DEVELOPMENT OF RECEPTIVE AND EXPRESSIVE COMMUNICATION REPERTOIRES

a. Incorporate communication skills training into every aspect of the student's day.

b. Target communication skills as specific steps within functional activities.

c. Create a need for students to communicate.

d. Provide frequent opportunities for students to make choices.

e. Provide novel stimulation within a consistent and expected routine.

(Overhead 26a)

STRATEGIES FOR INCREASING THE DEVELOPMENT OF RECEPTIVE AND EXPRESSIVE COMMUNICATION REPERTOIRES

f. Use the student's preferred communication modes.

g. Change the student's communication modes through the course of a lifetime depending on need.

h. Use natural reinforcers whenever possible.

i. Avoid cue dependency.

j. Give students ample time to respond to communicative interactions.

(Overhead 26b)

STRATEGIES FOR INCREASING UNINTENTIONAL AND INTENTIONAL COMMUNICATION SKILLS

a. Accept any form of communication.

b. Reinforce multiple means of communication.

c. Reinforce interactive or potentially interactive behaviors.

d. Be consistent with daily routines.

e. Respond to all of the student's behavior as if it has communicative intent.

STRATEGIES FOR INCREASING SOCIAL INTERACTION SKILLS

a. Provide many different types of instructional groupings.

b. Schedule activities that require sharing materials or turn-taking.

c. Be sure to instruct nondisabled peers about how to communicate with students.

d. Teach the student and a nondisabled peer how to initiate a communicative exchange.

(Overhead 28)

Appendix B

Handouts

274

Examples of Forms and Functions: Conventional Gestures through Emergent Language

Nonsymbolic Functions	*Forms*		
	Concrete Symbolic (Conventional Gestures)	**Symbolic (Sign/ Objects or Pictures)**	**Abstract/ Speech/Abstract Symbols**
Protest/reject object in view	Shake head	Push away symbol for object in view	"Finished
Request object in view	Open palm	Tap symbol for object in view	"Cracker"
Request ongoing action	Mime parts of action	Point to symbol for ongoing action	"More"
Request attention	Raise hand	--	"Mom"

(Handout 1a)

Examples of Forms and Functions: Conventional Gestures through Emergent Language

Nonsymbolic Functions	*Forms*		
	Concrete Symbolic (Conventional Gestures)	**Symbolic (Sign/ Objects or Pictures)**	**Abstract/ Speech/Abstract Symbols**
Direct attention	Point	--	"Look"
Request information/permission	Eye contact/hesitation	--	"Please"
Offer/share	Extend object	--	"Here"
Social	Wave	--	"Hi"
Confirm/deny	Nod Head	--	"Yes"
Protest/reject absent object	--	Push away symbol for absent object	"Spinach" & shake head

(Handout 1b)

Examples of Forms and Functions: Conventional Gestures through Emergent Language

Nonsymbolic Functions	*Forms*		
	Concrete Symbolic (Conventional Gestures)	**Symbolic (Sign/ Objects or Pictures)**	**Abstract/ Speech/Abstract Symbols**
Request absent object	--	Extend symbol for absent object	"Ice cream"
Request absent action	--	Tap symbol for absent action	"Eat"
Label	--	Point to symbol for referent	"Ball"
Comment	--	--	"All gone"
Question	--	--	"Why?"

Adapted from: Stremel-Campbell, K. (1985). *Community intervention for infants with sensory impairments.* Paper presented at Illinois TASH Conference.

DISCREPANCY ANALYSIS

Student: Age:

Environment:
Subenvironment: Key: + Correct Response
Activity: - Incorrect Response

STEPS	STUDENT INVENTORY	DISCREPANCY ANALYSIS	TEACHING STRATEGIES

(Handout 2)

MEDIATING CHALLENGING BEHAVIORS

Service Provider Training Module

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I. General Information-Overview

A. Service Provider Training Module

Mediating Challenging Behaviors

B. Purpose of the Module

This module provides a format for introducing behavior management techniques based on assessment information and positive programming strategies for individuals with dual sensory and multiple impairments.[1] The importance of assessing student behavior in terms of communicative intent, quality and quantity of intervention, as well as psychological, medical, motivational, and environmental factors is included. Additionally, positive programming strategies, basic definitions, and examples of behavioral technology are reviewed.

C. Intended Audience

This module was developed to assist service providers (e.g., teachers, group home personnel, paraprofessionals, occupational therapists, physical therapists, speech-language therapists, and psychologists) to mediate behavioral challenges demonstrated by children and youth with dual sensory and multiple impairments.

D. Levels of Training

Awareness and Knowledge

E. Entry Level Skills or Prerequisites

Participants should bring to this training experience an awareness of behavior management strategies and a general knowledge of positive behavioral interventions. In addition, participants should have experience working with individuals who have dual sensory and multiple impairments.

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[1] Information and strategies for understanding the communicative functions of aberrant behaviors are provided to assist service providers. Legal and ethical considerations regarding the use of aversive strategies are discussed, emphasizing the advantages of using nonaversive strategies.

F. General Outcome Competencies

Participants will demonstrate awareness and knowledge of the following:

1. The rationale and characteristics of aversive and nonaversive behavior management strategies.

2. Ethical and legal issues surrounding behavior management strategies.

3. Advantages of nonaversive interventions based on a functional analysis of behavior.

4. Variables that may influence behavior.

5. Positive programming based on assessment information.

6. Basic behavioral technology used in behavior management.

7. Nonaversive behavior management strategies.

G. Module Delivery Organization

1. Number of Lectures: 5

2. Amount of Time: Five two-hour lectures for a total of ten hours. Additionally, several group activities and opportunities for discussion are included. The combination of lecture, group activities, and discussion results in a total training session length of approximately two days.

3. Materials and Equipment: Materials and equipment will vary depending upon the activities and presentation style of the trainer. It is recommended that the trainer use a variety of presentation materials and equipment (e.g., overhead transparencies, slides, or videotapes).

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H. Special Instructions

While there are many books on behavior management, this module is based on two specific works: a) *Alternatives to Punishment: Solving Behavior Problems with Nonaversive Strategies* [(LaVigna & Donnellan, 1986) which provides a conceptual base for this module]; and b) *Progress Without Punishment* [(Donnellan, LaVigna, Negri-Shoultz, & Fassbender, 1988) a companion volume for specific training strategies].

Please note that the majority of the content in this module is devoted to intervention strategies that emphasize positive consequences. Although it is important to use positive programming whenever possible, the editors felt that it was important to address negative consequences and crisis control as well. A brief section titled, "Editor's Note" is devoted to these two topics at the conclusion of this module.

Finally, the trainer should be sensitive when addressing disabling conditions of an individual by acknowledging the individual first and the disabling condition second. For example, the phrase, "students with deaf-blindness and multiple impairments" should be used rather than the phrase, "severely multiply handicapped and deaf-blind students." The two terms, deaf-blindness" and "dual sensory impairments," are used interchangeably throughout the module.

II. Training Instructions

A. Trainer Preparation

The trainer should have a thorough understanding of assessment, program development, and positive behavioral interventions for students with dual sensory and multiple impairments. In addition, the trainer should have demonstrated expertise in positive programming with the target population. The trainer should be familiar with the suggested readings prior to the training sessions.

B. How to Deliver the Module

It is recommended that the presentations include lectures, training activities, and discussion. Suggested training activities are listed under each content section. Trainers are encouraged to develop and use original resources to supplement their presentations.

C. Training Tips

Embedded within the text of the module are suggestions for ways in which the trainer can enhance participant attention and learning. These suggestions are typed in bold-faced italics and enclosed in a special bracket. Here is an example.

Pause here and ask participants to share any questions they may have so far.

III. Content-Part I: Aversive and Nonaversive Behavior Management

A. Module Delivery Organization

1. Lecture Number: 1

2. Amount of Time: Two hours

3. Specific Outcome Competencies

   Participants will be able to:

   a. describe the difference between aversive and nonaversive behavior management strategies

   b. describe the advantages of nonaversive behavior management in terms of social validity

   c. list three issues concerning the use of aversive procedures that have been challenged in the courts

   d. describe why nonaversive interventions based on analysis of the functions of behavior are important

   e. give examples of aberrant behavior and describe three possible communicative intentions (either intentional or unintentional) for each behavior

B. Content Overview Outline

1. Characteristics of Aversive and Nonaversive Interventions

2. Ethical and Legal Issues

3. Advantages of Nonaversive Interventions Based on a Functional Analysis of Behavior

C. Suggested Readings for the Presenter

Sections of the content in the readings listed below served as a basis for development of this module. The trainer will need to obtain these resources and master the content prior to delivering the module.

Altmeyer, B. K., Williams, D. E., & Sams V. (1985). Treatment of severe self-injurious and aggressive biting. *Journal of Behavior Therapy and Experimental Psychiatry, 18* (2), 169-172.

Baer, D., Wolf, M., & Risley, T. (1968). Some current dimensions of applied behavior analysis. *Journal of Applied Behavior Analysis, 1*, 91-97.

Carr, E., & Durand, V. M. (1985). Reducing behavior problems through functional communication training. *Journal of Applied Behavior Analysis, 18*, 111-126.

Conley, O. S., & Wolery, M. R. (1980). Treatment by overcorrection of self-injurious eye gouging in preschool blind children. *Journal of Behavioral Therapy and Experimental Psychiatry, 11*, 121-125.

Council for Exceptional Children. (1983). Code of ethics and standards for professional practice. *Exceptional Children, 50*, 205-218.

Foxx, R., McMorrow, M., Bittle, R., & Bechtel, D. (1986). The successful treatment of a dually diagnosed deaf man's aggression with a program that included contingent electric shock. *Behavior Therapy, 17*, 170-186.

Guess, D., Helmstetter, E., Turnbull, H. R., & Knowlton, S. (1987). Use of aversive procedures with persons who are disabled: An historical review and critical analysis. *Monographs of the Association for Persons with Severe Handicaps, 1.*

Halderman v. Pennhurst State School and Hospital, 446 F. Suppl 1295 (E. D. Pa. 1977), aff'd in part, rev'd. in part, 612 F. 2d 84 (3d Cir. 1979), rev'd. and remanded, 451 U.S. 1 (1981).

Kaimowitz v. Department of Mental Health, No. 73-19434-AW (Cir. Ct. Mich., filed July 10, 1973, Prison Law Reporter, 2, 433).

Luiselli, J. K., Myles, E., Evans, T. P., & Boyce, D. A. (1985). Reinforcement control of severe dysfunctional behavior of blind, multihandicapped students. *American Journal of Mental Deficiency, 90* (3), 328-334.

Luiselli, J. K., & Slocumb, P. R. (1983). Management of multiple aggressive behaviors by differential reinforcement. *Journal of Behavior Therapy and Experimental Psychiatry, 14* (4), 343-347.

Mackey v. Procunier, 477 F. 2d 877 (9th Cir. 1973).

Martin, R. (1981). Legal issues in preserving client rights. In H. Christian & H. Clark (Eds.), *Preservation of clients rights.* New York: Free Press.

Reilich, L. L., Spooner, F., & Rose, T. L. (1984). The effects of contingent water mist on the stereotypic responding of a severely handicapped adolescent. *Journal of Behavior and Experimental Psychiatry, 15*, 165-170.

Tarpley, H. D., & Schroeder, S. R. (1979). Comparison of DRO and DRI on rate of suppression of self-injurious behavior. *American Journal of Mental Deficiency, 84*(2), 188-194.

The Association for Persons with Severe Handicaps. (1987). TASH resolution on the cessation of intrusive interventions. *TASH Newsletter, 13*, 3.

Turnbull, H. R., & Guess, D. (1986). A model for analyzing the moral aspects of special education and behavioral intervention: The moral aspects of aversive procedures. In P. Dokecki & R. Zaner (Eds.), *Ethics of dealing with persons with severe handicaps: Toward a research agenda* (pp. 167-210). Baltimore: Paul H. Brookes.

Voeltz, L., & Evans, I. (1983). Educational validity: Procedures to evaluate outcomes in programs for severely handicapped learners. *Journal of the Association for the Severely Handicapped*, 8, 3-15.

Wesolowski, M. D., & Zawlocki, R. J. (1982). The differential effects of procedures to eliminate an injurious self-stimulatory behavior (digital-occular sign) in blind retarded twins. *Behavior Therapy, 13* (3), 334-345.

D. Introduction to the Content, Part I

Introduce participants to this section of the module by displaying Overhead 1. "For the next two hours, we will cover the following topics:

1. ***Characteristics of aversive and nonaversive interventions***
2. ***Ethical and legal issues***
3. ***Advantages of nonaversive interventions"***

E. Specific Content

Display Overhead 2 as you begin this section.

1. Characteristics of Aversive and Nonaversive Interventions

   a. Procedures or interventions are characterized as aversive if a stimulus or event includes the contingent introduction of stimuli an individual would ordinarily seek to avoid, or removal of stimuli or events which an individual would ordinarily seek to maintain. If either type of stimuli or event results in a future decrease in the target behavior, it is considered to be a punisher. While aversive procedures or interventions are implemented with the purpose of reducing or suppressing behaviors considered to be inappropriate or nonconventional, these procedures may often have the effect of producing emotional or physical pain, or discomfort. In addition, aversive interventions may include procedures that are not considered desirable by the recipient or the person administering the procedure. Some procedures are dehumanizing to the person with a disability, as well as having the potential of causing physical side effects. Often, these procedures are considered to be unacceptable for nondisabled persons.

Pause at this point and provide an example. You may want to ask for an example from the participants.

Display Overhead 3 as you continue.

b. Nonaversive procedures or interventions also are implemented with the purpose of reducing or suppressing behaviors considered to be inappropriate or nonconventional. Properly used, these are behavior management techniques that can effectively modify an undesirable behavior, yet still: 1) maintain the rights and dignity of the individual; 2) maintain the physical and psychological well-being of the individual; 3) use positive reinforcement, positive programming, or ecological manipulations; and 4) are acceptable to families, guardians, direct-care staff, and society in general.

c. Examples of aversive and nonaversive procedures that have been used to decrease behaviors in individuals with dual sensory and multiple impairments have been drawn from current literature. These examples not only clarify the basic differences between aversive and nonaversive procedures, but also demonstrate the variety of interventions that fall within each category.

Display Overhead 4 as you review the use of aversive procedures.

i. Documented examples of target behaviors, paired with commonly used aversive procedures include:

- hair pulling paired with electric stimulation (Foxx, McMorrow, Bittle, & Bechtel, 1986);
- eye gouging paired with overcorrection (Conley & Wolery, 1980);
- tantrumming paired with response interruption (Belcher, Conetta, Cole, Iannotti, & McGovern, 1982);
- biting paired with aversive tastes (Altmeyer, Williams, & Sams, 1985);
- eye pressing paired with a variation of time out (Wesolowski & Zawlocki, 1982);

and

- placing objects over face paired with water mist (Reilich, Spooner, & Rose, 1985).

ii. Documented examples of target behaviors paired with commonly used nonaversive procedures include:

Display Overhead 5 as you review the use of nonaversive procedures.

- aggression paired with communication training or DRO (Durand & Kishi, 1987; Luiselli & Slocumb, 1983);
- eye-pressing paired with DRO (Luiselli, Myles, Evans, & Boyce, 1985);
- aggression, verbal and physical tantrumming paired with reinforcement (Carr & Durand, 1985); and
- self-injurious behavior paired with DRO or DRI (Tarpley & Schroeder, 1979).

Display Overhead 6 here, and provide definitions of the following terms.

d. The effectiveness of both aversive and nonaversive procedures can be judged on many criteria including: speed and degree of effects[2], duration[3], generalization[4], and maintenance[5] (Baer, Wolf, & Risley, 1968). While these are important considerations for any intervention, the value of nonaversive procedures increases when social and educational validity, as well as social and community integration issues, are taken into consideration. Some nonaversive strategies, such as Differential Reinforcement of Alternative Behaviors (Alt-R) and positive programming strategies, (e.g., teaching replacement communicative behaviors) have educational validity. That is, they teach behaviors that are useful and functional in a variety of settings. Acceptance by the student, parents, program personnel, and the community at large generally is greater when the strategy is nonaversive.

---

[2] How quickly the behavior is brought under control and the degree to which the behavior is brought under control.

[3] How long the intervention strategy is applied before the behavior is under control.

[4] Whether the behavior is controlled in environments and with mediators other than those that occurred during the intervention.

[5] Whether the behavior is controlled after the intervention is no longer systematically applied?

2. Ethical and Legal Issues

Display Overhead 7 and expand the idea as noted below in the content. Participants may wish to comment on the issues at this time. You can permit a 5 minute discussion about the use of aversive or nonaversive strategies; or, you can ask the participants to hold their comments and questions until all of the content for this section has been presented.

a. Ethical issues are raised any time one person attempts to suppress or alter a behavior of another person. Although most persons will agree that eye-gouging can be both physically harmful and socially unacceptable, eliminating such a behavior nonetheless involves imposing one set of values on another person. Regardless of the function the behavior may serve for the individual, it is generally more acceptable to alter the behavior through nonaversive procedures rather than to suppress it with an aversive stimulus. Given the choice between aversive and nonaversive procedures, nonaversive strategies clearly raise fewer ethical questions (LaVigna & Donnellan, 1986).

b. Various aspects of intervention programs using aversive procedures have been challenged in the courts. For example:

Display Overhead 8. Expand on each issue listed on the following two pages. Examples from your own experience would be useful here.

i. Consent to treatment (by recipient or guardian) is a basic factor in the application of any aversive or nonaversive procedure and involves at least three variables. These variables are:

- the person giving consent is legally competent to do so;
- the person giving consent is sufficiently informed concerning the procedure; and
- the person giving consent is acting voluntarily.

Judges may overrule decisions to use aversive procedures even when consent has been given on the basis that one of the three variables is missing, or because additional protection is deemed necessary for the person subjected to the procedure. Moreover, when the individual has developmental impairments, consent is typically given by a third party, thus raising the legal standard against which "voluntary consent" is given. In cases when the informant does not have sufficient knowledge or skill in using nonaversive procedures, advocates may raise the question concerning the degree of "informed consent."

ii. The Constitution of the United States and most state laws guarantee due process of law, both substantive and procedural. It is possible for an individual's rights to be violated even if consent has been given for the use of an aversive procedure. The Constitution may prohibit specific aversive treatment if certain safeguards have not been met.

iii. The Eighth Amendment bans cruel and unusual punishment. Although this Amendment most often is applied to protect persons convicted of a crime, serious questions related to a violation of this amendment can be raised when aversive interventions are applied to individuals with various impairments.

iv. The notion of "least drastic means" protects an individual from unnecessary restrictions of freedom. This has been interpreted to mean that positive procedures must be used before negative or aversive procedures. If negative or aversive procedures are used, they must be applied in the context of positive procedures. In addition, prior to administration of a negative or aversive procedure, a less intrusive or negative procedure must be used and found to be ineffective first.

v. The notion of "unconstitutional conditions" relates to conditions that may prohibit an

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individual from exercising constitutional rights. Some residential and/or educational situations are so inherently inappropriate, so devoid of stimulation and affirmation, that it would be difficult to justify any intervention to eliminate behaviors which may be reactions to environmental deprivation. For example, barren rooms, boring tasks, and lack of social interactions are often all that are available to individuals with dual sensory and multiple impairments.

c. In selecting strategies to mediate behavior, program administrators should do more than meet regulations and legal guidelines. An aspect of the administrator's responsibility in mediating behavior of individuals with dual sensory and multiple impairments is advocating for appropriate educational environments in addition to designing, implementing, and evaluating instructional and behavioral interventions.

3. Advantages of Nonaversive Intervention Strategies

Display Overhead 9 and expand on the list of advantages of nonaversive intervention strategies. Use examples from your experiences and, as time permits, encourage participants to contribute as well.

a. When using an operant model, the benefits of a nonaversive approach are obvious. In this model, behavior is viewed as a function of its consequences. If a response can be controlled through aversive contingencies, it generally can be controlled through nonaversive contingencies, provided these are properly implemented. Given the legal and ethical considerations previously raised, both contingencies may be equally effective, but nonaversive contingencies are less likely to be complicated by legal and ethical questions (LaVigna & Donnellan, 1986).

b. When nonaversive intervention strategies are based on analysis of the functions of the behavior, there are a number of variables which are addressed. One of these variables is interpreting behavior for its communicative functions. Because of the communication difficulties experienced by so many individuals with dual sensory impairments, the possibility must always be raised that the behavior of concern (regardless of how deviant) may be a communicative attempt or at least have communicative value. There is considerable evidence that, for many individuals with dual sensory impairments and multiple disabilities, aberrant behavior is an attempt to communicate. The communicative message may be legitimate even though the means or form of the aberrant behavior may not.

c. A pragmatic analysis of the communicative behaviors may show that a given behavior, such as biting one's hand, may have one or more communicative meanings. This behavior display may mean frustration, excitement, anger, or the need for attention.

d. Acknowledgement of function does not preclude intervention. The recognition that a behavior serves a legitimate function does not mean that it can or should continue in its present form. Functional analysis brings attention to the importance of a particular behavior and may signal the need to shape or teach a new or different way of expressing the individual's wants, needs, emotions, or intentions (LaVigna & Donnellan, 1986).

e. Some behaviors (e.g., self-stimulation) may have other noncommunicative functions, such as self-regulation. A thorough functional analysis may reveal that the behavior increases under certain situations, such as times of transition. Thus, the behavior can have communicative value (i.e., it gives us information) even when the student may not have intended to communicate to us.

f. Sometimes the behavior seems random or irrational. Nonetheless, the "least dangerous assumption" means that the behavior may serve a function for the individual. Therefore, a thorough functional analysis of the behavior should be conducted prior to intervention (Donnellan, 1984).

F. Training Activity

1. Have participants divide into small groups. Based on the examples listed below, have participants indicate whether the sample behaviors are being managed with aversive or nonaversive interventions.

SAMPLE BEHAVIOR	AVERSIVE	NONAVERSIVE
1. Joey is visually impaired and has moderate to severe disabilities. Joey appears to dislike having the classroom lights dimmed during "rest time" after lunch. He frequently gets off his mat to turn the lights on. His instructional aide yells at him when he starts moving toward the light switch.		
2. David is being taught to sort silverware and a range of other fine motor tasks. It is hoped that performance on these tasks will replace his habit of inserting alternate hands down his throat.		
3. Allison wears cloth mitts during the school day as a consequence for scratching adults.		
4. Mark is on a program to learn activation of a bell as a signal to terminate work. Before the bell program was begun, Mark indicated his low tolerance for continued work performance by screaming, throwing materials, and out-of-seat behavior.		
5. Dickie has "autistic-like" behaviors including generating foamy saliva which drips off his chin onto his shirt. When the classroom staff tire of changing his shirt, they tie an emesis bowl around his neck to collect the saliva.		

2. Have participants discuss positive and negative aspects of each type of behavior management strategy in relation to:
   a. ethical and legal issues
   b. communicative functions of behavior

IV. Content-Part II: Analyzing Variables that Influence Behavior

A. Module Delivery Organization

1. Lecture Number: 2

2. Amount of Time: Two hours

3. Specific Outcome Competencies

   Participants will be able to:

   a. describe the importance of assessing medical or physiological factors

   b. list five questions that might be asked when assessing medical or physiological factors

   c. define an ecological analysis

   d. generate at least five questions that might be used during an ecological analysis

   e. list three questions that might be included in an analysis of antecedent events or stimuli

   f. list three questions that might be included in an analysis of consequent events or stimuli

   g. describe three characteristics of a pragmatic approach to behavior

   h. describe a mediator analysis

   i. define motivation according to the behavioral model

B. Content Overview Outline

1. Physiological or Medical Factors

2. Rationale for Analyzing Variables that Influence Behavior

3. Behavioral Ecology

4. Analysis of Antecedent and Consequent Stimuli

5. Communicative Functions of Behavior (Pragmatic Analysis)

6. Mediator Analysis

7. Motivational Analysis

C. Suggested Readings for the Presenter

Carr, E. (1977). The motivation of self-injurious behavior: A review of some hypotheses. *Psychological Bulletin*, 84, 800-816.

Carr, E., & Durand, V. M. (1985). Reducing behavior problems through functional communication training. *Journal of Applied Behavior Analysis, 18*, 11-126.

Carr, E., Newsom, C., & Binkoff, J. (1980). Escape as a factor in the aggressive behavior of two retarded children. *Journal of Applied Behavior Analysis, 13*, 101-117.

Donnellan, A. (1984). The criterion of the least dangerous assumption. *Behavioral Disorders, 9*, 141-150.

Donnellan, A., Mirenda, P., Mesaros, R., & Fassbender, L. (1984). Analyzing the communicative functions of behavior. *Journal of the Association for Persons with Severe Handicaps, 9*, 201-212.

Durand, V. M. (1982). Analysis and intervention of self-injurious behavior. *Journal of the*

Association for the Severely Handicapped, 7, 44-53.

Durand, V. M. (1986). Self-injurious behavior as intentional communication. *Advances in Learning and Behavioral Disabilities, 5*, 141-155.

Durand, V. M., & Kishi, G. (1987). Reducing severe behavior problems among persons with dual sensory impairments: An evaluation of a technical assistance model. *Journal of the Association for Persons with Severe Handicaps, 12*, 2-10.

Gaylord-Ross, R., Weeks, M., & Lipner, C. (1980). An analysis of antecedent, response, and consequence events in the treatment of self-injurious behavior. *Education and Training of the Mentally Retarded, 15*, 35-42.

Schuler, A., & Goetz, L. (1981). The assessment of severe language disabilities: Communicative and cognitive considerations. *Analysis and Intervention in Developmental Disabilities, 1*, 333-346.

Willis, T., LaVigna, G., & Donnellan, A. (1989). *Behavior assessment guide.* Los Angeles: Institute for Applied Behavior Analysis.

D. Introduction to the Content, Part II

Introduce participants to this section of the module by displaying Overhead 10: "For the next two hours, we will cover the following.

1. ***Physiological or medical factors***
2. ***Rationale for analyzing variables that influence behavior***
3. ***Behavioral ecology***
4. ***Analysis of antecedent and consequent stimuli***
5. ***Communicative functions of behavior (pragmatic analysis)***
6. ***Mediator analysis***
7. ***Motivational analysis"***

E. Specific Content

1. Physiological or Medical Factors

   a. Physiological or medical issues should be considered part of any comprehensive analysis of behavior, as an inappropriate behavior may be occurring due to either condition. For example:

i. a child may bang the side of his head because of pain from an ear infection;

ii. an individual may pick at skin that is dry and irritated as a side effect of medication; or

iii. a person may hit staff when directed to go to the bathroom because of painful urination related to a urinary tract infection.

b. Educators, parents, and medical personnel should work as a team to determine if there may be a physiological or medical basis for an aberrant behavior. Educators should be aware of specific aspects of a student's behavior that may reflect a physiological or medical issue so they can contact appropriate personnel. Likewise, educators can be invaluable for monitoring potential side effects or reactions to medical interventions. For example, if the student received a new medication, the physician should inform the parent and educator of potential side effects, such as drowsiness, increased activity, and skin irritation. Observational data regarding the occurrence of one or more side effects can assist the physician in modifying medication dosages, changing medications, or providing insights into potential physiological problems (Evans & Meyer, 1985; Willis, LaVigna, & Donnellan, 1989). For example, Emily, an adolescent with dual sensory impairments, began to poke her eyes during the beginning of the school year at a new school. Her eyes appeared red with slightly swollen eyelids. Her teacher was concerned and immediately began an analysis of the behavior. The teacher began by asking Emily's mother a series of medically-oriented questions. Emily's mother told the teacher that Emily had difficulty with hay fever. The new school was located in a rural part of town next to a large field that contained ragweed, unlike her previous school. Emily's teacher and mother hypothesized that Emily might be poking her eyes due to irritation from the pollen. Emily's mother took her to their family physician for an examination. After taking all factors into consideration, Emily's physician prescribed an allergy medication. Emily stopped poking her eyes after she began taking the medication. Emily's physician monitored the allergy medication on an ongoing basis.

c. When considering physiological and medical factors, parents and educators should ask the following questions:

Display Overhead 11 as you discuss the importance of the following questions.

i. When was the last complete physical examination and what were the results of this exam?

ii. Is there a history of neurological problems (e.g., fainting or abnormal EEG); heart or circulation problems (e.g., high blood pressure or heart murmur); digestive problems (e.g., rumination, ulcers, or constipation); urinary or genital problems (e.g., painful urination, frequent masturbation, or menstrual difficulty); problems with muscles or bones (e.g., tremors, tics, or dislocation); skin problems (e.g., irritation or infection); or allergies? If the answer to any of these conditions is yes , how might these effect the individual's behavior? Is there a medical intervention that would reduce or eliminate the problem?

iii. What is the individual's visual acuity? Does the individual benefit from corrective lenses? Has the person received mobility training?

iv. What is the individual's hearing ability? Does the individual use hearing aids? What is the individual's ability to hear with the aids? Are the aids working properly?

v. Does the person have any physical disabilities? If yes, do they restrict the person's movement in his environment?

vi. Is this person taking any medication at this time? If yes, list the medications, dosages, and the potential side effects of the medications.

vii. Does the individual experience seizures? If yes, the type of seizure, the frequency, when the last seizure occurred, and effects of the seizures should be recorded (Willis, LaVigna, & Donnellan, 1989).

At the end of this section, ask participants if they have questions or comments that they would like to add.

2. Rationale for Analyzing Variables that Influence Behavior

The behavior of any individual is affected by many environmental variables. Rather than looking at behavior in isolation, the context or environment in which the behavior occurs can help us to more fully explain and understand an individual's behavior (Donnellan et al., 1988; LaVigna & Donnellan, 1986).

3. Behavioral Ecology

Display Overhead 12 which provides an outline of the following information.

a. Behavioral ecology requires consideration of everything surrounding the person and the specific behavior(s). The physical structure of the environment; time or hour of the day; opportunities for choice-making; expected or unexpected changes in routine; and number and characteristics of other persons in the student's environment are just a few examples of variables that might affect how an individual participates or reacts in a particular situation. Assessing a behavior from this approach helps to avoid the application of random interventions on discrete behaviors in isolation (Willis, LaVigna, & Donnellan, 1989).

b. An ecological analysis may give insight into the manner in which an individual with dual sensory and multiple impairments perceives and reacts to the environment. For example, Dan is a 17-year-old who is legally blind and has a hearing impairment. He is in a secondary classroom for students with multiple disabilities in an integrated high school. Dan punches the sides of his head for no apparent reason. Despite his considerable disabilities, Dan is a young man approaching adulthood who still needs to learn many functional skills. Additionally, consideration must be given to how much opportunity he has for control over his environment, as well as how interesting or confusing the environment may be to Dan. The following questions should be considered when conducting an ecological analysis of Dan's self-injurious behaviors.

Display Overhead 13 as you review how the questions could be used to analyze Dan's situation.

i. Are his activities interesting, functional and age-appropriate? Are they too difficult or too easy?

ii. Are there opportunities for choice-making (e.g., types of activities, when to begin, end or prolong an activity, when to eat, or what to eat)?

iii. With how many different staff members or nondisabled peers is he in contact? How often is this changed and how is he informed?

iv. Is he sensitive to noisy or crowded areas, such as the hallways, cafeteria, or gymnasium? Does he prefer quiet, non-crowded areas? What behaviors does he demonstrate to indicate these preferences?

v. Does he have freedom of movement in the classroom and outside the classroom? Are there any adaptations provided to allow freedom of movement?

vi. What are his communication skills? Does he use any symbolic forms of communication, such as communication books, signs, or language? Does he communicate nonsymbolically by whining, changes in body tension, facial expressions, grunting, smiling, or signs of agitation? What opportunities are available for Dan to initiate and respond to communicative interactions?

vii. What is the availability of reinforcement and preferred materials? What are they?

viii. How is he informed of activity or schedule changes? What adaptations are used? (Donnellan et al., 1988; LaVigna & Donnellan, 1986)

c. After considering these questions and collecting necessary data, Dan's teachers realized that opportunities for choice-making were not available. High rates of punching were recorded when Dan was in hallways that were noisy and crowded with other students, and transitions from one activity to another and one environment to another appeared to increase his self-injurious behavior. Ecological interventions included giving Dan two or three different choices for each scheduled activity, traveling through the halls during less crowded and noisy times, and developing a tactile schedule that helped Dan to understand what activity or environmental changes were occurring. As a result of these ecological manipulations, Dan's rate of punching decreased substantially.

d. Assessing a behavior through an environmental or ecological approach may be helpful in analyzing how an individual is affected by situational variables. Ecological interventions involve manipulation of the behavior indirectly by making changes in the environment rather than altering the behavior directly. While a full functional analysis by an experienced practitioner is required for severe life-threatening situations and other challenging behaviors, staff members and parents may find an ecological analysis useful in making simple environmental changes.

4. Analysis of Antecedent and Consequential Stimuli

a. Various antecedent stimuli (i. e., events or objects that precede the behavior) may set the occasion for the behavior or response to occur. An analysis of antecedent events or stimuli might involve asking the following kinds of questions:

Display Overhead 14 as you review the following questions.

i. In what settings or situations is the behavior most or least likely to occur?

ii. With which people is the behavior most or least likely to occur?

iii. Is there a specific time of the hour, day, week, month that the behavior is most or least likely to occur?

iv. Is there anything in particular that appears to precede or initiate in the behavior? (LaVigna & Donnellan, 1986; Willis et al., 1989)

Again, ecological interventions can be viewed as a form of antecedent strategy for structuring an environment (or making an environmental change) so that a behavior is less likely to occur. For example, Mary is 20 years old, has a profound hearing loss, and is legally blind. She often shows aggression toward others by biting or scratching. Classroom teachers are confused why she sometimes is aggressive toward vocational supervisors before going to work and some times is not. Through an ecological analysis, it is determined that Mary never aggresses toward one female supervisor but does aggress toward other supervisors; one male and one female. The routine of using her tactile communication and schedule notebook is consistently implemented by each person, and the work schedule does not change in terms of time of day or days of the week. After several observations, a classroom teacher notices that the supervisor who is never aggressed against, consistently wears heavily scented perfume. It is hypothesized that Mary smells the perfume even before any interactions occur, and this scent signals it is time for work. The scent gives Mary additional time to "prepare" for the transition and suggests that more preparation time or additional cues from the other supervisors are needed before beginning the transition to work. The other supervisors decide that they too will wear their own favorite scents to allow Mary more time to recognize them.

b. As antecedent stimuli may set the stage for a behavior or response to occur, so might various consequences (i. e., events or stimuli occurring immediately after a response or behavior) support a behavior. An analysis of consequent events or stimuli might involve asking the following kinds of questions:

Display Overhead 15 as you review the following questions.

i. What was the consequence the last time the behavior occurred?

ii. What do parents, teachers, or other personnel usually do when the behavior occurs? Does not occur?

iii. What methods have been used in the past? How effective have they been?

iv. What effect does the behavior have on others?

v. What actions seem to improve or relieve the situation when it occurs? (LaVigna & Donnellan, 1986)

An example of a consequence supporting a behavior is as follows: Lou frequently pushes or throws his work on the floor and begins slapping himself in his face. Staff members immediately run to him, establish contact, redirect him and involve him in another activity. Several hypotheses are suggested: a) Lou is simply bored, frustrated, tired, or confused by the activity and wishes it to cease; b) he wants attention or physical contact; or c) the activity is too long. The staff realize that their reactions to Lou's face slapping may, in fact, help to support the behavior. To test these ideas, the staff shorten the length of the activity, provide a more functional task that has meaning to Lou, and supplement the activity with physical contact and attention. Lou now has fewer episodes of throwing his work down and has ceased slapping his face.

5. Communicative Functions of Behavior (Pragmatic Analysis)

Display Overhead 16 as you review the following information.

a. A pragmatic approach to behavior implies that all behavior has communicative value whether or not the communication is intentional. Regardless of how aberrant or bizarre a behavior appears, it may be a legitimate attempt to interact and communicate by that person (Donnellan, Mirenda, Mesaros, & Fassbender, 1984; LaVigna, & Donnellan, 1986; Willis, LaVigna, & Donnellan, 1989).

b. A pragmatic approach requires consideration of behavior in context rather than as an isolated event. Furthermore, this approach also requires consideration that, while some behaviors may be conveying only one message, any single behavior may have several functions and other behaviors may serve that same function. Finally, a behavior may have different meanings when displayed by different learners.

c. A pragmatic approach requires that an analysis of communication function be conducted in a variety of situations across time to increase accuracy. Consider a nondisabled adult seated with her arms folded across the front of her body and her fingers tapping her arms. What does this particular body posture indicate? An analysis of the situation may reveal that the woman is seated in a large air-conditioned auditorium, listening to a lecture at five o'clock in the afternoon. A quick pragmatic analysis might suggest that the woman is bored, cold, hungry, a combination of all three, or none of these. The position of her body alone gives us little information. However, the same body position placed in the context of the time of day, level of interest regarding the lecture, or additional knowledge about her communication style, may convey one or several functional messages. Only the observation of such behavior under a variety of conditions would accurately portray the function of her behavior. Similarly, Brian is observed biting his hand. What message does this behavior convey? Does this behavior convey a certain message if Brian is described as nonverbal with dual sensory impairments? Additional information tells us that he is seated by an open window in the middle of winter, it is 11:45 a. m., and he has been involved in a sorting task at his desk for 45 minutes. A pragmatic approach to his hand biting may suggest that Brian is cold, hungry for lunch, ready to stop a task because it is too long or boring, or that he would like some attention or interaction with someone. In addition, an assessment of the biting behaviors over time and in other environments may give us other important information as to the functional message of this behavior.

d. An instrument that has been developed to analyze possible functions of behavior is *The Motivation Assessment Scale* (Durand, 1986). *The Motivation Assessment Scale* is designed to determine if a behavior serves one of four functions:

Display Overhead 17 as you review the following information. If you have a copy of the Motivation Assessment Scale, let the participants examine it after you complete an example of its use.

i. request a tangible item (e.g., does the behavior occur to obtain a toy, food, or activity?);

ii. seek attention (e.g., does the behavior seem to occur in an attempt to gain attention from other persons in the room?);

iii. escape (e.g., does the behavior occur following a request to perform a difficult task?); or

iv. provide sensory input (e.g., would the behavior occur continuously if the individual was left alone for long periods of time?).

The *Motivation Assessment Scale* is completed for a specific behavior that has been operationally defined (e.g., "bites the back of his hand" or "hits the side of his head with his open hand"). If the individual displays more than one challenging behavior, the scale is completed for each behavior. Using a Likert Scale ranging from 0 (never) to 6 (always), the evaluator indicates the frequency that the behavior occurs under specified conditions. After the scale is completed, the person's responses are tabulated according to the potential function the behaviors may serve. The scores are relative; the highest scores are considered to be the functions that the behavior serves. For example, the *Motivation Assessment Scale* was used to analyze the function of crying behavior displayed by a young child with dual sensory impairments. The results of the scores in the four areas were sensory-1; escape-13; attention-22; and tangible-4. The highest score was in the area of attention, therefore it is hypothesized that crying served as an attention seeking function for the child.

6. Mediator Analysis

Display Overhead 18 as you review the following information.

A mediator analysis addresses characteristics and interactions of service providers who work with students who have dual sensory and multiple impairments. The following issues should be addressed when conducting a mediator analysis:

a. Who works with the student? Specific characteristics of the person working with the student may often influence the quality or success of the interactions that take place. Examples of some characteristics might be gender, particular identifying scents of that person, size, high or low voice, gentle or firm physical interactions, and consistency.

b. How does the student respond to the person? The response of a student to a particular person may be influenced by the student's likes or dislikes of the individual's mannerisms, personality, consistency, trust, and history.

c. How does the person mediating the behavior respond to the student?

   i. Does the mediator give the student enough time to respond, request, or react? Does the mediator consistently attempt to understand behaviors, actions, or inactivity of the student as communicative? Is the mediator able or willing to clarify expectations to the student?

   ii. Given the fact that mediators may have endured difficult situations with a student (i.e., painful or dangerous interactions, or emotional stress from unsuccessful programs), does the mediator have the energy and patience to continue working with a particular student and the ability to respond in an effective manner?

d. Time constraints or amount of time available for the person working with the student. All educational programs follow schedules. Many of these schedules include specification of the number of staff persons that will be available to work with the student. Certain situations will allow for one-to-one instruction while other situations may need to accommodate a higher ratio. In addition, the student may be affected by a change in staff and often will be required to adapt to a new person due to time constraints. This may lead to inadequate closure with the mediator and confusion for the student if a task is continued with a different person.

e. Environmental constraints.

  i. Are the student and mediator confined to a specific room or area for long or short periods of time?
  ii. Do the student and mediator have access to various environments (within the building, outside the building, or in the community) during the day?
  iii. Are the environments frequented by the student easily accessible and comfortable (e. g., stairways, crowded hallways, noisy, or quiet areas)?

f. Level of expertise. The amount of experience a mediator has in working with individuals with dual sensory impairments, the ability to develop and implement behavior management procedures, the ability to understand and to apply symbolic and nonsymbolic communication strategies, and the ability to apply positive programming strategies can all have a major impact on student performance.

g. People or agencies currently or potentially involved with the student and the educational program. Increased access to a variety of environments will also increase the number of interactions an individual will have with others. This will require a primary mediator (or person who is familiar with the individual who has a disability) to model or teach others how to best communicate. Personnel from local rehabilitation agencies, peers or friends, consultants, vocational staff persons and employers, and persons in community sites (e.g., banks, restaurants, and grocery stores) can all be important persons for the mediator to train in communication strategies (Willis et al., 1986).

7. Motivational Analysis

Display Overhead 19 as you discuss the following information.

a. Motivation is a highly individualized factor. In a behavioral model, motivation is typically characterized as people responding in certain ways to attain reinforcement, and, in addition, to avoid or escape aversive events. Extrinsic motivators have been discussed at length in the literature. Less commonly discussed are those things which are intrinsic and often idiosyncratic motivators. Some possible intrinsic motivators are addressed under positive programming.

b. It is important to survey and identify potential reinforcers for an individual with dual sensory impairments. This may include preferences in the areas of foods, beverages, recreational activities, sensory stimuli, and feeling states (e.g., health, relaxation, or sleep).

c. When asking questions of significant individuals in the student's life, it is important to know how they have determined the student's preferences. For example, a 16 year old student may be reported to prefer children's songs and records. However, questioning might reveal that she has never been exposed to any other types of music. Similarly, this same individual may be reported to love swimming. An important component to this interpretation would be to learn: 1) if she ever has choices on when to enter or leave the pool; 2) whether she prefers a certain water temperature; or 3) what kinds of activities she enjoys most in or out of the pool (Willis, LaVigna, & Donnellan, 1989).

Be sure to allow time to answer participants' questions. Some individuals may have first hand experiences or examples to share.

F. Training Activity

1. Have participants divide into small groups and read the following student description.

2. When they have finished reading, have participants list five factors for structuring an ecological analysis. They should generate potential antecedent and consequent events related to those five factors that may be contributing to Trisha's head snapping and face gouging.

3. Have participants discuss the results of their analysis.

STUDENT DESCRIPTION:

Trisha is 19 years old. Due to her small stature, she is grouped with children ranging in age from 9-12 years. Trisha has detached one retina completely by snapping her head forward violently when she is frustrated; her other eye has a traumatic cataract. Trisha also picks at her face with her nails when she is not engaged in instruction.

V. Content-Part III: Positive Programming Based On Assessment Information

A. Module Delivery Organization

1. Lecture Number: 3

2. Amount of time: Two hours

3. Specific Outcome Competencies

Participants will be able to:

a. describe a rationale for utilizing positive programming

b. define positive programming

c. describe an unacceptable behavior that can be replaced by a new behavior

d. describe an alternative communication strategy that can become a substitute for an unconventional behavior

e. describe an appropriate alternative behavior (not necessarily communicative) that can become a substitute for a problematic behavior

f. describe the purpose of assigning meaning to a behavior

g. describe at least four ways intrinsic motivation can be addressed when planning positive programs

B. Content Overview Outline

1. Rationale for Utilizing Positive Programming

2. Strategies for Implementing Positive Programming

3. The Role of Motivation in Positive Programming

C. Suggested Readings for the Presenter

Bolstad, O., & Johnson, S. (1972). Self-regulation in the modification of disruptive classroom behavior. *Journal of Applied Behavior Analysis, 5*, 443-454.

Donnellan, A., & LaVigna, G. (1986). Nonaversive control of socially stigmatizing behaviors. *The Pointer, 30*, 25-31.

Eason, L., White, M., & Newsom, C. (1982). Generalized reduction of self-stimulatory behavior: An effect of teaching appropriate play to autistic children. *Analysis and Intervention in Developmental Disabilities, 2*, 157-169.

LaVigna, G. (1987). Nonaversive strategies for managing behavior problems. In D. Cohen & A. Donnellan (Eds.), *Handbook of autism and pervasive developmental disorders* (pp. 410-429). New York: John Wiley & Sons.

LaVigna, G., & Donnellan, A. (1986). *Alternatives to punishment: Solving behavior problems with nonaversive strategies.* New York: Irvington Press.

Liberman, R., King, L., DeRisi, W., & McCann, M. (1972). *Personal effectiveness.* Champaign, IL: Research Press.

D. Introduction to the Content, Part III

Introduce participants to this section of the module while displaying Overhead 20: "For the next two hours, we will cover the following topics:

1. ***Rationale for utilizing positive programming***
2. ***Strategies for implementing positive programming***
3. ***The role of motivation in positive programming"***

E. Specific Content

Display Overhead 21. Refer to it as you expand the content below and provide examples.

1. Rationale for Utilizing Positive Programming

   a. Positive programming is a gradual process for behavior change involving systematic instruction over time. This is different from other nonaversive procedures that typically involve discrete manipulations of specified undesirable behaviors (Donnellan et al., 1988).

   b. Positive programming that is based on a functional analysis has the potential for: 1) teaching new behaviors; 2) utilizing natural contingencies that enhance long-term maintenance; 3) preserving human dignity; and 4) having increased social validity. Emphasis is on skill building over an extended period of time rather than focusing on behavior reduction (LaVigna & Donnellan, 1986).

2. Strategies for Implementing Positive Programming

Display Overhead 22 as you present the following information.

   a. Teaching new behaviors requires a systematic program for replacing an old behavior with one which is more effective and socially acceptable (Donnellan et al., 1988). For example, Tammy is 18 years old with dual sensory impairments. She has, on the average, 8 to 10 tantrums everyday at school. These tantrums, which include screaming, crying, and spitting, may last from 5 to 20 minutes. During these episodes, it is difficult to communicate with Tammy and provide instruction. Staff members and Tammy's parents decide that a priority program objective is to provide opportunities for choice-making at the beginning and end of each activity and at transition periods. Using Tammy's tactile schedule and communication board, two choices are provided for every activity and transition. That is, during Tammy's work time in the school cafeteria, she is given a choice of drying off trays that have just been washed or stacking milk containers taken from the refrigerator. After completing her work, Tammy is given a choice of either juice or soda to drink on her break. She is also given the choice to sit at a table or on the sofa while drinking her selected beverage. Similar choices are given throughout other periods of the day. As a result, Tammy has fewer tantrums and is learning to make choices that give her greater control over educational environments. In addition, Tammy is beginning to increase interactions with others through the use of her tactile communication book. While tantrumming was not specifically addressed, this behavior decreased as new behaviors began to increase.

b. Implementing positive programming requires an analysis of the communicative function that a behavior may serve. Based on this function, an alternative communication strategy is developed as a substitute for the unconventional behavior. For example, Darryl is an 11 year old student with dual sensory impairments. He has a variety of self-stimulatory behaviors. In particular, slow rocking often turns into fast rocking, which progresses to head snapping. Staff hypothesize that his self-stimulatory behavior serves multiple functions including an attempt to communicate a need for attention; an attempt to communicate that the task is too difficult or too boring; or the desire to stop the activity. Darryl is taught to raise his hand to signal for assistance whenever he begins to engage in slow rocking. Staff immediately respond by taking Darryl's hand. This signifies that someone is now available to help him, and he can use his communication board to communicate his specific message or requests. Teaching Darryl to raise his hand is functional in a variety of activities and may be generalized to other environments.

c. Teaching more appropriate alternative behaviors may involve teaching other behaviors (not necessarily communicative) which can substitute for the problematic behavior (LaVigna & Donnellan, 1986). For example, Paula is a 13-year-old girl with dual sensory impairments and severe mental retardation. She attends an integrated middle school and is successful at traveling around in the school building using a sighted guide technique. Paula has a habit of pulling her hair. It appears she enjoys the physical sensation; however, this is clearly a nonconventional stigmatizing behavior in a regular middle school setting. Because Paula's schedule changes are similar to those of the other nondisabled students, she is often in the halls with many of her nondisabled peers. As an alternative to hair pulling, Paula is given her favorite beaded necklace just before leaving the classroom. Whenever Paula begins pulling her hair, the staff guide her hand to the necklace and encourage her to pull on the necklace so that she can feel the friction on the back of her neck. Pulling on her necklace and receiving a sensation similar to that of pulling her hair becomes an appropriate alternative behavior.

Another example of a procedure similar to substituting an appropriate alternative behavior is that of reinforcing an incompatible behavior. Paula occasionally carries a notebook which includes some of her tactile communication materials, her bus pass and other items. Using this procedure, Paula is taught to carry her communication notebook with her at all times and receives reinforcement for carrying it. This strategy accomplishes several goals. First, it is difficult for her to pull her hair and hang onto her notebook while maintaining contact with her guide. Second, this strategy is unobtrusive, as most of the other students also carry notebooks. Finally, Paula always has a means of communication available to her wherever she travels.

d. Assigning meaning to a behavior is a strategy that can be used with individuals who do not appear to be communicating intentionally. Setting up routine situations where a behavior is likely to occur and assigning meaning to the behavior by acting on or reacting to the behavior can provide feedback to the individual. This can increase the chances of developing the behavior into a systematic means of communication.

3. The Role of Motivation in Positive Programming

Display Overhead 23 as you deliver the following information.

a. Because motivation plays such an important part in analyzing behavior, suggestions should be made in the spirit of "the criterion of the least dangerous assumption" (Donnellan, 1984). According to this criterion, in the absence of consistent or conclusive data, professionals should make decisions based on assumptions which, if wrong, will have the least dangerous effect on the individual.

b. Among the intrinsic variables which affect our behavior are those which have to do with mastery over the environment. In other words, from a very early age individuals try to accomplish things in order to have a sense of control over their world. The "least dangerous assumption" is that children and adults with dual sensory and severe multiple impairments are no less interested in such mastery. Very often, individuals who exhibit severe behavior problems are those who have the least control or effect on their environments except through problematic behaviors.

There are a number of ways intrinsic motivation can be addressed when planning positive programs.

Display Overhead 24 and refer to it as you deliver the following information.

i. Choice-making. Recent authors have stressed the need to offer students choices regardless of their level of functioning. Many students will need to be taught systematically how to choose. In supportive environments, students can be assisted in selecting when an activity is to start, which job they want to do next, how long they work before a break, and with whom they will work.

ii. Cause and effect. Students are more likely to prefer activities in which they can note the effect of their actions. For example, collating is likely to be more interesting if the student is able to put the collated pages together with a loud electric stapler.

iii. Means-end relationships. Similarly, individuals with dual sensory and multiple impairments often have difficulty understanding the pattern of how their world works. If the tasks they do are ones which have a natural progression from one part of a sequence to another, students are more likely to understand the task. For example, learning to make waffles will make more sense if the students obtains a frozen waffle from the freezer, unwraps it, and puts a waffle in the toaster as each step of the task has a clear effect. Individuals with dual sensory and multiple impairments can begin to extract from the experience a pattern of how they created each effect in sequence.

iv. Time. Some individuals with dual sensory and multiple impairments seem to have great difficulty understanding the concept of time. Yet, they may still anticipate or dread an event without having a way to know when it might occur. Additionally, they may not have a way to ask what is about to occur. Simple adaptations, such as tactile schedules can help organize their days and assist in communication of a schedule change.

v. Closure. Often individuals with dual sensory and multiple impairments have so few options that they are merely moved from one place or task to another without having the opportunity to learn how or when a task begins and ends. They will be more likely to understand that something is finished if tasks can be adapted for cause and effect or means-ends. For example, if an individual with dual sensory and multiple impairments is being taught custodial work, emptying the wastebaskets is likely to be more meaningful than cleaning a sink because he can more easily judge whether or not the task is completed. To make the task of cleaning sinks more meaningful, solution used for the cleaning should be opaque and gritty rather than clear. This would make it easier for the individual to know the task has been completed. If behavior problems which are described as "noncompliance," "being off task" or "problems during transition times" can be analyzed in terms of the value of the task to the individual or the way the individual makes sense of the situation, then those problems can be addressed through curricular, instructional, and ecological changes.

F. Training Activity

Have participants divide into small groups and read the following student description. After they have finished reading, have the participants follow the steps listed under the student description.

STUDENT DESCRIPTION:

Kevin attends a state-certified nonresidential school that provides services to students between the ages of three and 21. Kevin is 20 years old, with a severe visual impairment , a mild hearing loss, and mild to moderate impairment in cognitive functioning. Kevin has a long history of tantrums and outbursts at school although his mother reports that she has no problems managing him at home. His tantrums have been observed to form a hierarchy beginning with yelling, throwing work, and removing his shoes and socks. These behaviors often lead to crying and hand waving, and accelerate to throwing his chair, and scratching anyone who comes near him.

1. Describe three new behaviors that you might teach Kevin that would replace his current behaviors.

2. Hypothesize five communicative functions that Kevin's behaviors might serve. Based on the

above hypotheses, what alternative communication strategies could be taught as substitutes for his unconventional behaviors.

3. Describe three alternative behaviors that are not necessarily communicative, but could be taught to replace the problem behaviors.

4. Are there any behaviors that could be assigned a meaning? If so, what are they?

5. List at least five environmental variables that may influence Kevin's level of motivation.

6. What kinds of choices could Kevin be given within the classroom?

VI. Content-Part IV: Basic Behavioral Technology

A. Module Delivery Organization

1. Lecture Number: 4

2. Amount of Time: Two hours

3. Specific Outcome Competencies

   Participants will be able to:

   a. describe four schedules of reinforcement (fixed ratio, variable ratio, fixed interval, and variable interval)

   b. describe the difference between backward chaining, forward chaining, and concurrent task sequencing

   c. describe how shaping can be used to teach a new skill

   d. define modeling and give an example of how modeling could be used with an individual with dual sensory and multiple impairments

   e. describe how prompting can be used to assist in the learning process

   f. define at least four types of data collection systems

B. Content Overview Outline

1. Schedules of Reinforcement

2. Chaining

3. Shaping

4. Modeling

5. Prompting

6. Data Collection

C. Suggested Readings for the Presenter

Donnellan, A., LaVigna, G., Negri-Shoultz, N., & Fassbender, L. (1988). *Progress without punishment.* New Hampshire: Teachers College Press.

Egel, A., Richman, G., & Koegel, R. (1981). Normal peer models and autistic children's learning. *Journal of Applied Behavior Analysis, 14*, 3-12.

Foxx, R., Rotatori, A., Macklin, F., & Green, H. (1983). Assessing reinforcer preference in severe behaviorally disordered children. *Early Child Development and Care, 11*, 113-122.

Konarski, E., Johnson, M., Crowell, C., & Whitman, T. (1980). Response deprivation and reinforcement in applied settings: A preliminary analysis. *Journal of Applied Behavior Analysis, 13*, 595-609.

Martin, G., & Pear, J. (1983). *Behavior modification: What it is and how to do it.* Old Tappan, NJ: Prentice-Hall.

Sulzer-Azaroff, B., & Mayer, G. (1987). *Applying behavior analysis procedures with children and youth.* New York: Holt, Rinehart, & Winston.

Stephens, C., Pear, J., Wray, L., & Jackson, G. (1975). Some effects of reinforcement schedules in teaching picture names to retarded children. *Journal of Applied Behavior Analysis, 8*, 435-447.

Touchette, P., MacDonald, R., & Langer, S. (1985). A scatter plot for identifying stimulus control of problem behavior. *Journal of Applied Behavior Analysis, 18,* 343-351.

Woods, T. (1987). The technology of instruction: A behavior analytic approach. In D. Cohen & A. Donnellan (Eds.), *Handbook of autism and pervasive developmental disorders* (pp. 418-429). New York: John Wiley & Sons.

Yu, D., Martin, G., Suthons, E., Koop, S., & Pallotta-Cornick, A. (1980). Comparisons of forward chaining and total task presentation formats to teach vocational skills to the retarded. *International Journal of Rehabilitation Research, 3,* 77-79.

D. Introduction to the Content, Part IV

Introduce participants to this section of the module while displaying Overhead 25. "For the next two hours, we will cover the following topics:

1. ***Schedules of reinforcement***
2. ***Chaining***
3. ***Shaping***
4. ***Modeling***
5. ***Prompting***
6. ***Data collection"***

E. Specific Content

1. Schedules of Reinforcement

Display Overhead 26 and refer to it as you present the following information.

a. Using a variety of reinforcement schedules when instructing students with dual sensory and multiple impairments can help avoid and preclude behavior problems.

b. A continuous reinforcement schedule (CRF) means the reinforcer is delivered every time the target behavior occurs (Donnellan et al., 1988; Martin & Pear, 1983).

c. Fixed ratio, variable ratio, fixed interval, and variable interval are the schedules of reinforcement most often used in applied settings (Donnellan et al., 1988; Martin & Pear, 1983; Sulzer-Azaroff & Mayer, 1977).

i. Fixed ratio (FR). A fixed ratio schedule means the reinforcer is delivered after a set number of desired responses have occurred. For example, an individual would be on a FR reinforcement schedule at work if she receives a token after she correctly stuffs, labels, and seals two envelopes.

ii. Variable ratio (VR). A variable ratio schedule is similar to a fixed ratio schedule except that it requires delivery of the reinforcer after a pre-determined average number of responses. However, the required number of responses varies from one reinforcement period to the next. The required number of responses varies around a set number. For example, slot machines use a type of variable ratio schedule.

iii. Fixed interval (FI). A fixed interval schedule means the reinforcer is delivered after the first display of the target behavior at a set time interval. For example, receiving a pay check at the end of each week is a type of fixed interval schedule.

iv. Variable interval (VI). A variable interval schedule means the reinforcer is delivered after the target behavior occurs at a changing time interval. The time intervals vary around a set average. For example, a professor who gives "surprise quizzes" and grades on an average of once every three weeks is using a variable interval schedule.

v. Typically, a behavior that has been reinforced using a variable interval or ratio schedule will be maintained over a longer period of time than a behavior that has been reinforced using a fixed interval or ratio schedule.

d. Reinforcers should be selected on an individual basis.

Display Overhead 27 as you present the following information.

i. The selected reinforcer should be very rewarding to the individual.

ii. Additional considerations should be made when selecting reinforcers for students with dual sensory impairments. Activities that are reinforcing to nondisabled peers may not be reinforcing to students with vision and hearing impairments. Activities, objects, events, or stimulation that involve the olfactory and tactile senses should be considered as possible reinforcers for student with dual sensory impairments. Reinforcers may include: a hand held fan, a fan with streamers, body massage with lotion, whirlpool bath, exercise equipment, carnival rides, or opportunities to make and eat popcorn.

Pause and ask participants if they have questions about the content.

2. Chaining

Display Overhead 28 and refer to it as you review the following information.

a. Chaining is the systematic teaching of a task after it has been analyzed.

b. The two types of chaining are serial chaining (either forward or backward), and concurrent chaining or total task presentation (Donnellan et al., 1988: Martin & Pear, 1983; Sulzer-Azaroff & Mayer, 1977).

   i. Serial chaining. Only one step in the chain is taught during each instructional session. There are two types of chaining; forward chaining and backward chaining. In forward chaining, the first step in the sequence is taught initially. Once the first step is acquired, the second step is added to the sequence. When both steps have been learned, the third step is introduced. Additional steps are added sequentially after the previous steps are learned. In backward chaining, the last step in the sequence is taught first. The next to last step is taught second. Additional steps are added as previous steps are learned.

   ii. Concurrent chaining or total task presentation. When using concurrent chaining or total task presentation, all components of the task are taught in order during each training session. The staff member prompts the student through each step of the sequence according to the appropriate level of assistance.

c. Chaining is an effective procedure to use for teaching long or complex sequential motor tasks, such as dressing, brushing teeth, or hand washing.

d. When selecting which chaining procedure to use for teaching individuals with dual sensory and multiple impairments, the student's level of involvement and understanding of the whole task should be considered. For some students, the desired outcome is independent task completion. For other students, partial participation may be a more appropriate goal.

3. Shaping

Display Overhead 29 and refer to it as you review the following information.

a. Shaping is the development of a new behavior through the reinforcement of successive approximations to the desired behavior.

b. Shaping is used when the target behavior is not present in the student's repertoire, but he is capable of ultimately performing the activity (i.e., there is a behavior that can be shaped to the goal).

c. The steps involved in an effective shaping procedure are;
   i. specifying the final desired behavior,
   ii. selecting the starting behavior, and
   iii. planning the successive steps (Donnellan et al., 1988; LaVigna & Donnellan, 1986; Martin & Pear, 1983).

d. Shaping is often used to teach independent time-on-task, independent walking, or natural gestures.

Ask participants to share examples of when they have used shaping.

4. Modeling

Display Overhead 30 as you review the following information.

a. Modeling is demonstrating an example of the target behavior for the student to imitate.

b. Modeling can be used effectively when teaching some students with dual sensory and multiple impairments. This depends on the amount of residual vision or hearing the student may have. For example, if the student has some residual vision, modeling would be appropriate if the behavior being modeled is exaggerated. When signing "yes" or "no", head movements should be exaggerated, or when greeting students, the educator's hand should be extended into the student's visual field to model introductory hand-shaking (Martin & Pear, 1983; Sulzer-Azaroff & Mayer, 1977).

5. Prompting

Display Overhead 31 as you review the following information.

a. A prompt is assistance that may be given to the student before the occurrence of the target behavior (also referred to as a cue). The student also may be prompted after making a mistake. Prompts often are:

   i. physical and vary with regard to the degree of intrusiveness (e. g., from lightly tapping the back of the student's hand to putting the student through the desired movement);

    ii. verbal (e.g., varies from whispering to instructing the student using a normal voice tone); or
    iii. environmental (e. g., the bell signaling a change of classes or the end of a break).

b. Unless the prompt is intended to be a permanent form of assistance, it should be faded from the learning sequence. This is important so the student does not become prompt dependent (Donnellan et al., 1988). For example, the teacher is instructing a student on washing his face. The student completes the entire task except at the end of the sequence he plays with the water instead of rinsing the face cloth. He continues playing in the water until he is told to stop. From the student's perspective, this may be the way he understands the task, "I continue to play until you stop me." Using a discrete trial format, the instructor would begin by verbally or physically prompting the student as he places the face cloth under the water, prompting the correct response, and ending the prompt as the student begins the next step. The physical or verbal prompts should be faded as quickly as possible.

c. Some students have more difficulty giving up certain types of prompts than others . If a physical prompt is difficult to fade, a proximity prompt (i. e., the teacher *shadows* the student's movements or provides support at various points on her extremities) may be used instead. It is recommended, however, to limit the use of physical prompts as it may tends to create prompt dependence.

6. Data Collection

Display Overhead 32 and refer to it as you review the following information.

a. Target behaviors must be operationally defined so staff persons understand what to observe when recording data.

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b. Staff persons collect data in order to determine whether there has been a change or lack of change in the target behaviors.

c. Baseline data are collected on target behaviors prior to implementing a behavioral intervention. Baseline data are collected until the data are stabilized (i.e., no upward or downward trends). Baseline data provide a comparison for data collected during intervention.

d. The selection of data collection systems depends upon the type of target behavior and the direction of behavioral change that is desired. The following are types of data collection systems commonly used.

Display Overhead 33 and refer to it as you review the types of data collection systems listed.

i. Frequency recording. Frequency recording is documenting the number of discrete occurrences of the targeted behavior during a specified time period. For example, recording the number of eye gouges from 9:00 to 11:00 at school, or recording the number of papers dropped on the floor while a students collates papers at a job site.

ii. Duration recording. Duration recording is documenting the total amount of time the student engages in a behavior. For example, recording how long a tantrum lasts, or the number of minutes that the student will work at her job before seeking attention.

iii. Time sampling. Time sampling involves recording the presence or absence of the target behavior during a series of short time intervals. For example, documenting after every 10 minutes the occurrence (X), or nonoccurrence (O) of head hitting, or recording a student's on-task behavior at five-minute intervals.

iv. Scatter plot. Scatter plots involve recording data over time, days, places, or people. This procedure may help to identify environmental factors that may be contributing to the rate of occurrence. For example, a teacher used a scatter plot to record the occurrence of eye-poking behavior during every activity of the school day for two weeks. The teacher wanted to learn if changes in staff to student ratio, certain kinds of tasks, or a change in environments affected the student's eye-poking behavior.

v. Trial-by-trial. Trial-by-trial data collection involves recording data at the end of each trial. For example, the teacher records whether the student drank each sip of juice from a cup independently, or with full physical assistance.

vi. Anecdotal. Anecdotal data collection involves writing a summary of events, activities, or interactions. For example, the teacher wrote a summary describing the student's behavior during morning kindergarten. Anecdotal data are best used in conjunction with an objective data collection procedure (Donnellan et al., 1988; Martin & Pear, 1983; Sulzer-Azaroff & Mayer, 1977; Touchette et al., 1985).

F. Training Activities

1. Have participants describe and give an example of a fixed ratio, variable ratio, fixed interval, and variable interval schedules of reinforcement.

2. Have participants divide into small groups. Have each group member generate a list of reinforcers that may be effective for students with dual sensory impairments. Have group members discuss how to assess the effectiveness of potential reinforcers.

3. Have selected participants describe serial chaining (either backward or forward), and concurrent chaining (total task presentation) to teach one of the following activities.
    a. Making a sandwich

    b. Bed making

    c. Hand washing

d. Towel folding

e. Putting on a jacket

4. Have participants divide into three groups. Assign an entry level behavior paired with a desired behavior listed below for each group. Have group members describe how they might shape the behaviors.

	Entry Level Behaviors		**Desired Behavior**
a.	The student moves if another student sits next to her on the couch.	a.	The student will remain seated for five minutes on the couch.
b.	The student screams when it is time to leave for the school cafeteria.	b.	The student will walk quietly to lunch.
c.	The student drops to the ground refusing to walk when assistance is provided.	c.	The student will walk without the assistance from a staff member or parent.

5. Have all participants write a description of how they would operationally define one of the behaviors listed below. Collect their descriptions. Read each description in front of the large group. Have the group decide whether or not the behavior was operationally defined. The behaviors are as follows:

a. Head Hitting

b. Tantrumming

c. Screaming

d. Rocking

e. Noncompliance

VII. Content - Part V: Alternative Procedures

A. Module Delivery Organization

1. Lecture Number: 5

2. Amount of Time: Two hours

3. Specific Outcome Competencies

Participants will be able to:

a. define differential reinforcement of other behavior (DRO) and give an example of the use of DRO with a specific behavior problem

b. define differential reinforcement of low rates of behavior (DRL) and give an example of the use of DRL with a specific behavior problem

c. define differential reinforcement of alternative behaviors (Alt-R) and give an example of the use of Alt-R with a specific behavior problem

d. explain the 100% rule and the importance of using the 100% rule with Alt-R procedures

e. explain the difference between stimulus control and instructional control

f. define stimulus change and give an example of the use of stimulus change

B. Content Overview Outline

1. Differential Reinforcement of Other Behaviors (DRO)

2. Differential Reinforcement of Low Rates of Responding (DRL)

3. Differential Reinforcement of Alternative Behaviors (Alt-R)

4. Stimulus Control

5. Instructional Control

6. Stimulus Change

C. Suggested Readings for the Presenter

Cautela, J., & Baron, M. (1973). Multifaceted behavior therapy of self-injurious behavior. *Journal of Behavior Therapy and Experimental Psychiatry, 4*, 125-131.

Cautela, J., & Groden, J. (1978). *Relaxation: A comprehensive manual for adults, children, and children with special needs.* Champaign, IL: Research Press.

Deitz, S., Repp, A., & Deitz, D. (1976). Reducing inappropriate classroom behavior of retarded students through three procedures of differential reinforcement. *Journal of Mental Deficiency Research, 20*, 155-170.

Donnellan, A., LaVigna, G., Zambito, J., & Thvedt, J. (1985). A time-limited intensive intervention program model to support community placement for persons with severe behavior problems. *Journal of the Association for Persons with Severe Handicaps, 10*, 123-131.

Evans, I., & Meyer, L. (1985). *An educative approach to behavior problems: A practical decision model for interventions with severely handicapped learners.* Baltimore: Paul H. Brookes.

Homer, A., & Peterson, L. (1980). Differential reinforcement of other behavior: A preferred response elimination procedure. *Behavior Therapy, 11*, 449-471.

Kazdin, A., & Erickson, L. (1975). Developing responsiveness to instructions in severely and profoundly retarded residents. *Journal of Behavior Therapy and Experimental Psychiatry, 6*, 17-21.

Luiselli, J., Helfen, C., Colozzi, G., Donellon, S., & Pemberton, B. (1978). Controlling self-inflicted biting of a retarded child by the differential reinforcement of other behavior. *Psychological Reports, 42,* 435-438.

Mace, F., Kratochwill, T., & Fiello, R. (1983). Positive treatment of aggressive behavior in a mentally retarded adult: A case study. *Behavior Therapy, 14,* 689-696.

Meyer, L. H., & Evans, I. M. (1986). Modification of excess behavior: An adaptive and functional approach for educational and community contexts. In R. Horner, L. H. Meyer, & H. D. Fredericks (Eds.), *Education of learners with severe handicaps: Exemplary service strategies* (pp. 315-350). Baltimore: Paul H. Brookes.

Rollings, J., & Baumeister, A. (1981). Stimulus control of stereotypic responding: Effects on target and collateral behavior. *American Journal of Mental Deficiency, 86,* 67-77.

The Association of Persons with Severe Handicaps. (1981, November). Resolution on intrusive interventions. *TASH Newsletter, 7* (11), 1-2.

Young, J., & Wincze, J. (1974). The effects of reinforcement of compatible and incompatible alternative behaviors on the self-injurious and related behaviors of a profoundly retarded female adult. *Behavior Therapy, 5,* 614-623.

D. Introduction to the Content - Part V

Introduce participants to this section of the module while displaying Overhead 34. "For the next two hours, we will cover the following topics:

1. ***Differential reinforcement of other behaviors (DRO)***
2. ***Differential reinforcement of low rates of responding (DRL)***
3. ***Differential reinforcement of alternative behaviors (Alt-R)***
4. ***Stimulus control***
5. ***Instructional control***
6. ***Stimulus change"***

E. Specific Content

Display Overhead 36 as you deliver the following information.
Be sure to provide clear examples.

1. Differential Reinforcement of Other Behavior (DRO)

Differential reinforcement of other behavior (DRO) is delivering reinforcement to an individual who fails to exhibit the target behavior during a specified period of time. The student may be reinforced for engaging in any other appropriate behavior. For example, the target behavior may be self-hitting on the legs and the designated interval is 10 minutes. If the student does not hit his legs and sits quietly or works at a task, he receives the reinforcer as long as he does not hit his legs at the end of the 10 minute interval (Donnellan et al., 1988; LaVigna & Donnellan, 1986).

The specific time interval that is used is important to the success of the DRO procedure. Generally, the initial interval should be about half the average time between occurrences of the target behavior as observed during baseline. For example, if the student exhibits self-injurious behavior on an average of once every 30 minutes, the initial interval for delivering reinforcement should be 15 minutes (i. e., 1/2 X 30 = 15).

Display Overhead 36 as you present the following information.
Be sure to provide clear examples.

2. Differential Reinforcement of Low Rates of Responding (DRL)

Differential reinforcement of low rates of responding (DRL) is used with behaviors that occur at a high rate. The following descriptions are two variations of DRL(Donnellan et al., 1988; LaVigna & Donnellan, 1986).

a. The first type of DRL procedure requires that the target behavior is reinforced only if it occurs after a specified interval of time has passed since the last display of the behavior. For example, a student at a vocational placement indicates the need for assistance on an average of once every five minutes. Asking for assistance is a behavior that should not be eliminated from the student's repertoire, but simply reduced to a more acceptable level. Using a DRL schedule, the student would be reinforced (e.g., given attention) if more than five minutes passed since the last time she asked for assistance.

b. With the second type of DRL, reinforcement is given if fewer than a specified number or level of targeted responses occur during the specified time interval. For example, a child takes the attendance to the office and pounds loudly on the door. The school secretary responds only when she knocks softly.

c. Students with dual sensory and multiple impairments should be given concrete, nonpunitive feedback systems to help them monitor their rate of behavior and monitor their reinforcement schedules. Examples of monitoring systems may include:

   i. objects that can be moved from one position to another (e.g., large paper clips moved from left to right on a long piece of cardboard, pencils moved from one container to another, or tokens moved from one side of a sequence box to another); and

   ii. physical representations that can be turned over (e.g., a raised X on individual pieces of paper, or a rough surface on one side of the paper).

When the individual displays the targeted behavior, one of the items of the feedback system is moved to the other side or turned over. If at the end of the interval there are any items left unturned, the student receives reinforcement.

Display Overhead 37 as you present the following information.
Be sure to provide clear examples.

3. Differential Reinforcement of Alternative Behaviors (Alt-R).

Differential reinforcement of alternative behaviors (ALT-R) is reinforcement of a behavior that is incompatible with the target behavior. The use of an ALT-R procedure can be demonstrated best with an example of noncompliant behavior. If the target behavior is noncompliance, the student would be reinforced each time he complied with a request. It is necessary to define carefully both compliance and noncompliance so that all personnel who work with the student are reinforcing the same behavior (Donnellan et al., 1988; LaVigna & Donnellan, 1986).

a. For Alt-R to be effective, the 100% rule must be satisfied. Under the 100% rule, the alternative and the target behavior must be defined as covering all the possible behaviors.
   i. "Compliance" versus "noncompliance" meets the 100% rule.
   ii. "Sitting in a seat" versus "out-of-seat" behaviors satisfies the 100% rule.
   iii. Hands-in-mouth" versus "brushing teeth" does not satisfy the 100% rule because the student could fail to have his hand in his mouth, as well as fail to brush his teeth (e.g., he could have his hands on the table).

b. If the 100% rule cannot be met, additional appropriate behaviors should be added to the list for reinforcement to approximate the 100% rule. Using a "hands-in-mouth" example the 100% rule could be approximated by reinforcing "hands-on-table", "hands-in-pockets", manipulating an object, and "hands-on-lap." The occurrence of any one of these behaviors would result in reinforcement in conjunction with the pre-determined reinforcement schedule.

c. Unless the 100% rule has been met, it is possible to increase a desirable, alternative response without necessarily decreasing the target behavior. Because of the complexity of identifying an incompatible, topographically dissimilar behavior that satisfies the 100% rule, ALT-R is a complex procedure to implement. It should be very carefully designed and monitored. Often, it is necessary to add another procedure, such as DRO to ensure that the target behavior is decreased.

Display Overhead 38 as you deliver the following information. Be sure to provide clear examples.

4. Stimulus Control

Stimulus control refers to the occurrence of a behavior in the presence of a particular stimulus configuration. All individuals are under the influence of stimulus control in various situations. Ordinarily, most individuals would not yell out in the middle of a wedding. On the other hand, most would not sit quietly at a sporting event (Donnellan et al., 1988; LaVigna & Donnellan, 1986).

a. Stimulus control procedures are useful when it is desirable for a student's target behavior to occur only at specified times and in designated settings, situations, or environments.

b. Examples of behaviors that may be appropriate for stimulus control procedures are rocking, masturbation, self-talk, noises, hand weaving, or finger flapping. Using stimulus control procedures, a student would be taught that it is acceptable to rock when sitting in a specified chair at home, or that she may engage in other self-stimulatory behaviors when in her bedroom.

Display Overhead 39 as you present the following information. Be sure to provide clear examples.

5. Instructional Control

Instructional control is a particular type of stimulus control in which the behavior occurs in the presence of, or after the presentation of an instructional cue. The cue may be visual, auditory, or tactile. A student under instructional control would learn that he should put on his coat, get his knapsack, and walk to the bus when given the verbal or signed cue, "The bus is here." Likewise, a student who leaves his seat to play with the water, can learn that when the light is on in the sink area and the teacher says "It is water time," he can play with the water as he likes (Donnellan et al., 1988; LaVigna & Donnellan, 1986).

Display Overhead 40 as you deliver the following information. Be sure to provide clear examples.

6. Stimulus Change

Stimulus change is the introduction of a new stimulus or novel situation that results in a temporary reduction of the target behavior. Stimulus change should not be considered a behavior change procedure, since it will not modify a behavior over a long period of time. However, stimulus change may temporarily reduce the behavior so that a systematic procedure can be implemented. If, for example, a student rocks "all the time," a change of classroom, a new task requiring gross motor movement, or an introduction of noise and light (i. e., depending upon the student's hearing and vision loss) may reduce the rocking so that a carefully designed DRL or other procedure can be implemented (Donnellan et al., 1988; LaVigna & Donnellan, 1986).

F. Training Activities

1. Have participants divide into small groups. Have group members discuss how they would use either DRO or ALT-R procedures to modify one of the situations listed below. Group members should answer the questions listed under the chosen procedure.
    a. John is five years old. He is nonambulatory with some residual hearing and vision. There are four other students with a variety of disabling conditions in John's class. John pulls his hair once an hour. Staff report that John likes pretzels, popcorn, and potato chips.
        i. What additional information do you need?
        ii. What possible reinforcers do you suggest?
        iii. What types of feedback systems would you use with John?

b. Georgia is 12 years old and diagnosed as having dual sensory impairments. She has some central vision and a moderate hearing loss. Georgia constantly wanders about the classroom disrupting other students. Her teacher does not mind that Georgia walks around during her free time, but he does not like her disturbing the other students.

   i. What alternative behavior could you reinforce?
   ii. What possible reinforcers do you suggest for Georgia?
   iii. What might you do in addition to, or instead of using ALT-R?

2. Have participants list some possible instructions that could be used effectively in an instructional control procedure for a student with dual sensory impairments, and identify what behaviors they think these procedures could effectively control. They will need to record their responses on a blank transparency. Have participants discuss their examples as a large group.

3. Have participants divide into small groups. After reading the student description listed below, have group members answer the questions following the story.

STUDENT DESCRIPTION:

Ed is 15 years old and lives at home with his mother and two younger brothers. Both brothers attend elementary school. Ed is profoundly deaf and has a severe vision impairment. He was diagnosed as having moderate to severe mental retardation. Ed is nonambulatory, but can propel himself in his wheelchair with assistance. Ed can eat semi-independently by bringing food to his mouth with a spoon. Ed is on a toileting schedule with an occasional accident (i.e., one to two times per week).

Ed attends a regular high school in a class of four other students with severe multiple impairments. Ed's classroom is located in the special education wing although he eats lunch with the other students. The students in Ed's class also attends all assemblies and pep rallies. His classroom is staffed by a teacher, and two paraprofessionals, speech/language pathologist, an OT, a vision itinerant teacher, and a PT are available on a pull-out basis.

Ed's educational program involves community training five afternoons a week. Monday through Wednesday he trains on a vocational task; Thursday he bowls or swims at the YMCA (the two activities are switched weekly); and Friday he purchases groceries at a grocery store. Ed's vocational task is conducted at a university cafeteria when he receives training as a dishwasher. A paraprofessional accompanies him to the cafeteria. His job entails stacking glasses and cups onto trays, and sorting silverware. Ed seems to enjoy dumping the silverware onto the counter to sort it, and will typically do that task faster and more accurately than any of the other jobs.

After the students have completed their morning activities, they practice skills in the classroom that will hopefully generalize in their community training. Currently, Ed's program at school involves pull-out physical therapy four mornings a week. The rest of his morning activities change on a daily basis. His schedule is as follows: on Mondays, Ed prepares a dish for lunch (each student makes one dish); on Tuesdays, he dusts and sweeps the classroom; on Wednesdays, he launders towels and clothes in a washer and dryer located in the classroom; on Thursdays, he dusts books in the school library; and on Fridays, he attends woodshop.

In the classroom, Ed follows a consistent schedule by using a calendar box. He does not have a communication system that he can use in the community although in the classroom he is given some choices of activities through presentation of actual objects when they are available. He does not have a device to gain attention and does not appear to seek attention from staff or classmates. Every morning the teacher pushes Ed to his communication box and guides Ed's hand to the representation of the first activity. She then puts it in his lap and pushes him to the location of the activity. After the activity is completed, she pushes him back to the communication box where he is prompted to put it in a "finished box." Ed is then prompted to pick up the next representation and then is pushed to that activity. Typically, after being pushed to the activity location, Ed begins to poke his eyes while his teacher sets up his activity. Ed will continue to poke his eyes until the behavior is interrupted or redirected by his teacher or another staff member. Although the teacher has not collected baseline data for eye poking, she reports that Ed often is observed poking his eyes while riding the bus to school, while waiting for the teacher to cut up his food at lunch, and while activities are being set up in the classroom.

When Ed continues to poke his eyes in the classroom after the teacher has interrupted or redirected the behavior three times, she warns him that she will mist his face with lemon juice if he does not stop. She warns him by passing the bottle under his nose so that he can detect the aroma. Typically, he stops the eye poking; if not, he is removed from the activity, and if the behavior occurs again, he loses his privileges for going into the community that afternoon. If Ed pokes his eyes outside of the classroom, the teacher interrupts the behavior or redirects Ed three times. After the third directive, she holds his hands in his lap until he appears calm. If Ed continues to poke his eyes, he is taken back to the classroom to work on a simulated vocational task for the rest of the day.

1. Given the information presented above, respond to the following questions:
    a. Identify current behavior management strategies used with Ed in terms of their aversive and nonaversive characteristics.

    b. For the strategies that are listed as aversive, describe why these characteristics might be considered aversive.

    c. Generate a list of questions that could be answered regarding an ecological analysis of Ed's eye poking.

    d. Analyze Ed's eye poking behavior through its communicative value.

e. Generate ways to motivate Ed during his vocational training at the university cafeteria and in the classroom.

f. Generate a list of potential age-appropriate reinforcers for Ed and ways to determine their effectiveness.

g. Address the data collection procedure used for Ed's eye poking behavior.

h. Address how to use DRO for Ed's eye poking and what additional information is needed.

i. Address how to use Alt-R for Ed's eye poking and what additional information is needed.

j. Based upon your DRO and Alt-R interventions for Ed in items (h) and (i), tell why one procedure may be preferable over the other.

G. Editor's Note

All of the procedures discussed so far have relied solely on positive consequences. However, in society at large, (including our educational institutions) the use of planned and unplanned negative consequences continues. The purpose for using a negative consequence is to reduce the future probability of a response. There is a broad range of negative consequences that vary along a number of dimensions including the degree of intrusiveness involved during implementation of the procedure. According to Meyer and Evans (1986), only those natural events that provide feedback to a student that a particular response is unacceptable should be used (e.g., mild verbal reprimands, brief physical interruption and redirection, or loss of privileges). Natural negative events have none of the characteristics mentioned in the Resolution on Intrusive Interventions (1981) adopted by the executive board of the *Association for Persons with Severe Handicaps*. Those characteristics are:

> "1) obvious signs of physical pain; 2) potential or actual physical side effects, including tissue damage, physical illness, severe stress, and/or death, that would properly require the involvement of medical personnel; 3) dehumanization of persons with severe disabilities because the procedures are normally unacceptable for nondisabled persons in community environments; 4) extreme ambivalence and discomfort by family, staff, and/or caregivers regarding the necessity of such extreme strategies or their own involvement in such interventions; and 5) obvious repulsion and/or stress felt by nondisabled peers and community members who cannot reconcile extreme procedures with acceptable standard practice." (p. 1-2)

Service providers who choose to add supplementary natural negative consequences to procedures that emphasize positive consequences may want to consider the following factors:

1. Select only those negative consequences that can be administered without uncommon physical structures that are typically unavailable in community environments (e.g., use planned ignoring rather than seclusion or exclusion time-out);

2. Select only those procedures that do not eliminate a student's learning opportunities;

3. Select only those procedures which are unlikely to make other functional situations aversive (e.g., avoid toothbrushing with Chloroseptic as a consequence for biting); and

4. Select combinations of procedures that are likely to insure that specific positive consequences are delivered at a faster rate than negative consequences. Modifications in both ecological factors (e.g., setting, or intervention agent) and curriculum (e.g., task selection and level of difficulty) in combination with DRO, DRL, or Alt-R may be appropriate in this regard.

Additionally, it is recognized that some students engage in behaviors that occur at a very high rate (e.g., mouthing, or hand flapping). The successful management of these behaviors may require periods of brief, physical restraint in addition to the use of DRO or other procedures. Any contingent physical restraint procedures must be brief, applied without a struggle, and be faded systematically (Meyer & Evans, 1986). Please recognize that the form of brief physical restraint mentioned here is only one form of response interruption. Other forms include the use of protective clothing (e.g., arm or hand restraints, velcro straps, mittens, a soft helmet) or verbal cuing (e.g., "Put your hands down, please".) The use of protective clothing in lieu of a comprehensive, educational program that emphasizes positive consequences is viewed as inappropriate by these editors.

The use of any planned negative consequence should be considered only after procedures utilizing positive consequences alone prove to be unsuccessful. Approval for the use of negative consequences should occur in the context of team decision-making (including the parents) and must adhere to all school, agency, and governmental guidelines.

Finally, there may be emergency situations when forceful restraint may be necessary to prevent a student from injuring self or others. Emergency procedures alone do not result in the student's acquisition of an expanded repertoire of appropriate behavior. For this reason, the use of forceful physical restraint is appropriate for short-term emergency use only until the effects of more broad-based curricular and ecological intervention procedures emerge.

VIII. Sources for Additional Information

Association for Retarded Citizens. (1984). *Position statements on programmatic issues.* Arlington, TX: Association for Retarded Citizens-United States.

Publishers address: Association for Retarded Citizens-United States of America
c/o Publications Department
2501 Avenue J
Arlington, TX 76006
Phone number: (817) 640-0204
Cost of book: $2.00

Donnellan, A., LaVigna, G., Negri-Shoultz, N., & Fassbender, L. (1988). *Progress without punishment.* New Hampshire: Teachers College Press.

Publisher's address: Teachers College Press
Columbia University
P. O. Box 939
Wolfeboro, NH 03894
Phone number: (800) 356-0409
Cost of book: $15.95

Durand, V. M. (1986). The motivation assessment scale. In M. Hersen & A.S. Bellack (Eds.), *Dictionary of behavioral assessment techniques.* New York: Pergamon Press.

Publisher's address: McMillan Publishing Company
Front and Brown Streets
Riverside, NJ 08075
Phone number: (800) 257-8247
Cost of book: $95.00

Evans, I., & Meyer, L. (1985). *An educative approach to behavior problems: A practical decision model for interventions with severely handicapped learners.* Baltimore: Paul H. Brookes.

Publisher's address: Paul H. Brookes Publishing Company
P.O. Box 106224
Baltimore, MD 21285-0624

Phone number: (800) 638-3775

Cost of book: $21.00

Guess, D., Helmstetter, E., Turnbull, H.R., & Knowlton, S. (1987). Use of aversive procedures with persons who are disabled: An historical review and critical analysis. *Monographs of the Association for Persons with Severe Handicaps, 1.*

Publisher's address: TASH
7010 Roosevelt Way, NE
Seattle, WA 98115

Phone number: (206) 523-8446

Cost of book: $15.00

LaVigna, G. (1987). Nonaversive strategies for managing behavior problems. In D. Cohen & A. Donnellan (Eds.), *Handbook of autism and pervasive developmental disorders* (pp. 410-429). New Jersey: John Wiley & Sons.

Publisher's address: John Wiley & Sons, Incorporated
One Wiley Drive
Somerset, NJ 08873

Phone number: (201) 469-4400

Cost of book: $55.00

LaVigna, G., & Donnellan, A. (1986). *Alternatives to punishment: Solving behavior problems with nonaversive strategies.* New York: Irvington Press.

Publisher's address: Irvington Press
740 Broadway, Suite 905
New York, NY 10003
Phone number: (212) 777-4100
Cost of book: $27.50

Martin, G., & Pear, J. (1983). *Behavior modification: What it is and how to do it.* Old Tappan, NJ: Prentice-Hall.

Publisher's address: Prentice Hall Publishing Company
200 Old Tappan Road
Old Tappan, NJ 07675
Phone number: (201) 767-5937
Cost of book: $35.00

Turnbull, H., & Guess, D. (1986). A model for analyzing the moral aspects of special education and behavioral intervention: The moral aspects of aversive procedures. In P. Dokecki & R. Zaner (Eds.), *Ethics of dealing with persons with severe handicaps: Toward a research agenda* (pp. 167-210). Baltimore: Paul H. Brookes.

Publisher's address: Paul H. Brookes Publishing Company
P.O. Box 10624
Baltimore, MD 21285-0624
Phone number: (800) 638-3775
Cost of book: $25.00

Willis, T., LaVigna, G., & Donnellan, A. (1989). *Behavior assessment guide.* Los Angeles: Institute for Applied Behavior Analysis.

Publisher's address: Institute for Applied Behavior Analysis
5777 West Century Boulevard, Suite 590

Los Angeles, CA 90045

Phone number: (213) 649-0499

Cost of book: $15.00

IX. Evaluation Measures

A. Pre/Post Evaluation

Mediating Challenging Behaviors: Service Provider Training Module

Donnellan, Kosovac, & Clark

Name ______________________________ Pre ____________

Date ______________________________ Post ____________

# Points Possible: 27

Length of Time Allowed: 30 minutes

1. Define aversive behavioral intervention strategies and list three examples of aversive procedures that have been used with students with dual sensory and multiple impairments. (5 pts.)

2. Define nonaversive behavioral intervention strategies and list three examples of nonaversive procedures that have been used for students with dual sensory and multiple impairments. (5 pts.)

3. Describe what is meant by the statement that unconventional behavior exhibited by individuals with dual sensory and multiple impairments may have *communicative intent*. (5 pts.)

4. Define two of the following: (4 pts.)
   a. Chaining
   b. Shaping
   c. Modeling
   d. Prompting

5. Give one example of each of the following: (4 pts.)
   a. Fixed Ratio (FR)
   b. Variable Ratio (VR)
   c. Fixed Interval (FI)
   d. Variable Interval (VI)

6. Define four of the following: (4 pts.)
   a. Differential Reinforcement of Other Behavior (DRO)
   b. Differential Reinforcement of Low Rates of Responding (DRL)
   c. Differential Reinforcement of Alternative Behavior (Alt-R)
   d. Stimulus Control
   e. Instructional Control
   f. Stimulus Change

B. Answer Key

1. Two points should be given for each correct definition and one point for the three examples.

   a. Definitions:
      - i. Removal of stimuli or event which an individual would ordinarily seek to maintain; or introduction of stimuli an individual would ordinarily seek to avoid.
      - ii. Procedures that may cause emotional or physical pain or discomfort.
      - iii. Procedures or interventions that are not considered desirable by the recipient or the person administering them.
      - iv. Often, these procedures are unacceptable for persons who are nondisabled.

   b. Examples:
      - i. Electric Shock
      - ii. Overcorrection
      - iii. Positive practice
      - iv. Restitution
      - v. Response interruption
      - vi. Aversive tastes (e.g. tabasco sauce, lemon juice, or vinegar)
      - vii. Time out (i.e. removing the individual from stimulation)
      - viii. Water mist

2. Two points should be given for each correct definition and one point each for the three examples.

   a. Definition:
      - i. Implemented to reduce or suppress behaviors while maintaining the rights, dignity, and the physical and psychological well-being of the individual.
      - ii. Strategies appropriate to the environment and chronological age of the individual.
      - iii. Acceptable to families, guardians, direct-care staff, and society.
      - iv. Use positive programming and ecological manipulations to reduce or suppress behavior.

   b. Examples:
      - i. Communication training
      - ii. DRO
      - iii. Verbal or physical reinforcement
      - iv. Alt-R

3. All behaviors, whether appropriate or inappropriate, have communicative intent. Individuals with dual sensory impairments sometimes exhibit inappropriate or stereotypic behaviors in attempts to communicate messages, such as "I am bored," "I need help," or "I don't like this." The communicative intent is determined through a detailed and comprehensive evaluation of the individual's environments, activities occurring within those environments, and the individual's behaviors within those environments.

4. The participants should define four of the five items listed. Each item is worth one point for the correct definition.

   a. Chaining. Systematically teaching a task after it has been task analyzed. There are three types of chaining: forward chaining, backward chaining, and concurrent chaining (total task presentation).

   b. Shaping. The development of a new behavior through the reinforcement or successive approximations to the desired behavior.

c. Modeling. Learning that occurs by watching others and imitating their behavior.

d. Prompting. Assistance given to a student before the occurrence of the desired behavior to preclude an error; or correction of a mistake that has already been made.

5. One example for each item will be scored for a maximum of 4 points. The example should fit within each of the following definitions.

a. Fixed ratio. Reinforcement occurs after a set number of desired responses (e.g., a student gets an M&M after every four correct responses).

b. Variable ratio. Reinforcement is provided after a certain number of responses, with the number of responses varying around a set number (e.g., a student gets an M&M after an average of four correct responses: three responses/one-trial; five responses/one trial; and four responses/one trial).

c. Fixed interval. Reinforcement is provided for the first display of the desired behavior after a set time interval (e.g., a student gets an M&M after the response occurs each minute).

d. Variable interval. Reinforcement is provided for the first display of the desired behavior after a changing time interval. The time interval varies around a set average (e.g., a student gets an M&M after the response occurs on an average of one minute; 55 seconds one trial, 65 seconds one trial, or 60 seconds one trial).

6. The participants should define any of the four items listed. Each item is worth one point for a correct definition.

a. Differential reinforcement of other behavior (DRO). Reinforcement for not exhibiting the target behavior during a specified period of time. The student may engage in any other behavior as long as it is not the target behavior.

b. Differential reinforcement of low rates of responding (DRL). Used with behaviors that occur at a high rate. Reinforcement is given only if a specified interval of time has passed since the last display of the behavior, or fewer responses than targeted have occurred during the time interval specified.

c. Differential reinforcement of alternative behaviors (Alt-R). Reinforcement of a behavior that is incompatible with the target behavior. To be most effective, it must satisfy the 100% rule.

d. Stimulus control. Changing behavior to more acceptable or appropriate levels, but the behavior is not targeted for elimination. This behavior needs to be controlled in various situations. Examples include, not yelling at church or waving at every person who walks by at the beach.

e. Instructional control. A particular type of stimulus control where the behavior occurs in the presence or after presentation of an instructional cue.

f. Stimulus change. An introduction of a new stimulus or novel situation that results in a temporary reduction of the target behavior. It should not be considered a behavior change procedure, since it will not modify behavior over a long period of time.

C. Participant Satisfaction Evaluation

A Series of Training Modules
on Educating Children and Youth
with Dual Sensory and Multiple Impairments

Participant Evaluation of Training

Mediating Challenging Behaviors: Service Provider Training Module

Trainer: ______________________ Date of Training: ______________________

Training Site: ____

Please read each of the following statements carefully and rate each statement using the following key:

1 = Strongly Disagree (SD)
2 = Disagree (D)
3 = Undecided (U)
4 = Agree (A)
5 = Strongly Agree (SA)

		(SD)	(D)	(U)	(A)	(SA)
1.	Overall, the content of this training met my expectations.	1	2	3	4	5
2.	I learned useful information about aversive and nonaversive behavior management philosophies	1	2	3	4	5
3.	I learned useful information about analyzing variables that influence behavior as a result of this training.	1	2	3	4	5
4.	I learned useful information about positive programming and alternative procedures as a result of this training	1	2	3	4	5
5.	The training provided specific information that I can apply.	1	2	3	4	5
6.	The training content was applicable to my needs as a service provider.	1	2	3	4	5
7.	Materials available from this training were relevant and beneficial.	1	2	3	4	5
8.	The trainer demonstrated competence in the areas of mediating behavioral challenges.	1	2	3	4	5
9.	The trainer communicated clearly and effectively.	1	2	3	4	5

		(SD)	(D)	(U)	(A)	(SA)
10.	The trainer was responsive to the questions of the participants.	1	2	3	4	5
11.	The trainer encouraged active involvement by participants and was able to facilitate group discussion.	1	2	3	4	5
12.	The trainer was able to effectively present information through utilization of a multisensory approach (i. e., lecture, overhead transparencies, handouts, readings, and videotapes).	1	2	3	4	5

13. After participating in these training activities, what ways do you foresee implementing the training?

14. What were the strengths of this training?

15. What follow-up needs can you identify for yourself?

16. In what ways could these training activities be improved?

Appendix A

Overhead Transparencies

CONTENT OUTLINE

1. Characteristics of Aversive and Nonaversive Interventions

2. Ethical and Legal Issues

3. Advantages of Nonaversive Interventions

(Overhead 1)

CHARACTERISTICS OF AVERSIVE INTERVENTIONS

Characterize as aversive:

if a stimulus or event includes the contingent introduction of stimuli an individual would ordinarily seek to avoid,

or

removal of stimuli or events which an individual would ordinarily seek to maintain.

(Overhead 2)

CHARACTERISTICS OF NONAVERSIVE INTERVENTION

A behavior management technique that can modify an undesirable behavior.

Nonaversive interventions include:

- maintenance of the rights and dignity of the individual,
- maintenance of the physical and psychological well-being of the individual,
- the use of positive reinforcement, positive programming, and/or ecological manipulations, and
- acceptability by others, (families, service providers, and society in general).

(Overhead 3)

EXAMPLES OF TARGET BEHAVIORS PAIRED WITH AVERSIVE PROCEDURES

Target Behaviors	Aversive Procedures	Authors
Hair pulling, aggression, and property destruction	Electrical stimulation	Foxx, McMorrow, Bittle, & Bechtel (1986)
Eye-gouging	Overcorrection	Conley, & Wolery (1980)
Tantrumming	Response interruption	Belcher, Conetta, Cole, Iannotti, & McGovern (1982)
Biting self and others	Aversive tastes	Altmeyer, Williams, & Sams (1985)
Eye pressing	Time out	Wesolowski, & Zawlocki (1982)
Placing objects over face	Water mist	Reilich, Spooner, & Rose (1985)

(Overhead 4)

EXAMPLES OF TARGET BEHAVIORS PAIRED WITH NONAVERSIVE PROCEDURES

Target Behaviors	Nonaversive Procedures	Authors
Aggression	Communication training with prompting, fading, and breaks for reinforcement	Durand, & Kishi (1987)
Eye pressing	DRO using preferred free time activity and praise	Luiselli, Myles, Evans, & Boyce (1985)
Aggression	DRO using verbal and edible reinforcers	Luiselle, & Slocumb (1985)
Aggression, verbal & physical tantrums, and out of seat behavior	Reinforcement, prompting, and fading	Carr, & Durand (1985)
Self-injurious behavior	DRO compared to DRI	Tarpley, & Schroeder (1979)

(Overhead 5)

CRITERIA FOR EFFECTIVENESS OF PROCEDURES

Speed and Degree of Effects

Duration

Generalization

Maintenance

Social and Educational Validity

(Overhead 6)

ETHICAL AND LEGAL ISSUES

Ethical issues are raised any time one person attempts to suppress or alter a behavior of another.

(Overhead 7)

EXAMPLES OF ETHICAL AND LEGAL ISSUES

1. Consent to Treatment
2. Due Process
3. Eighth Amendment
4. "Least Drastic Means"
5. "Unconstitutional Conditions"

(Overhead 8)

ADVANTAGES OF NONAVERSIVE INTERVENTIONS

a) Less likely to be complicated by legal and ethical questions.

b) Behavior is interpreted for its communicative functions.

c) A given behavior is considered to have more than one meaning.

d) Acknowledgement of function does not preclude the need for intervention.

e) Behavior can have communicative value even when the student may not have intended to communicate.

f) A thorough analysis of the behavior is conducted prior to intervention.

(Overhead 9)

CONTENT OUTLINE

1. Physiological or Medical Factors
2. Rationale for Analyzing Variables that Influence Behavior
3. Behavior Ecology
4. Analysis of Antecedent and Consequential Stimuli
5. Communicative Functions of Behavior (Pragmatic Analysis)
6. Mediator Analysis
7. Motivational Analysis

(Overhead 10)

PHYSIOLOGICAL OR MEDICAL CONSIDERATIONS

1. When was the last complete physical exam?
   What were the results?

2. Is there a history of any particular problems?
   For example,
   - neurological?
   - heart?
   - digestive?
   - muscles or bones?
   - skin?
   - allergies?

3. What is the individual's visual acuity?

4. What is the individual's hearing ability?

5. Does the individual have any physical disabilities?

6. Is this individual taking medication?

7. Does the individual experience seizures?

(Overhead 11)

BEHAVIOR ECOLOGY

"Behavioral ecology" refers to everything surrounding the individual and the specific behavior(s).

- The physical structure of the environment.
- Time of day.
- Opportunities for choice-making.
- Routines.
- Persons in the student's environment.

(Overhead 12)

ECOLOGICAL CONSIDERATIONS
("DAN")

1. Are his activities interesting , functional, and age-appropriate; too difficult or easy?

2. Are there opportunities for choices?

3. With how many different staff members and nondisabled peers is he in contact? How is he informed of changes?

4. What are his preferences to noisy vs. quiet; crowds vs. small groups? How can his preferences in this regard be determined?

5. Does he have freedom of movement?

6. What are his communication skills?

7. What forms of reinforcement and preferred materials are available?

8. How is he informed of activity and schedule changes? What adaptations are used?

(Overhead 13)

ANALYSIS OF ANTECEDENT EVENTS OR STIMULI

- In what settings or situations is the behavior most or least likely to occur?
- With which people is the behavior most or least likely to occur?
- Is there a specific time that the behavior is most or least likely to occur (i. e., hour, day, week, or month)?
- Is there anything in particular that appears to precede or result in the behavior?

ANALYSIS OF CONSEQUENT EVENTS OR STIMULI

- What was the consequence the last time the behavior occurred?

- What do parents, teachers, or other personnel usually do when the behavior occurs? Does not occur?

- What methods have been used in the past? How effective have they been?

- What effect does the behavior have on others?

- What actions seem to improve or relieve the situation when it occurs?

COMMUNICATIVE FUNCTIONS OF BEHAVIOR (PRAGMATIC ANALYSIS)

A pragmatic approach to behavior assumes that:

- All behavior has communicative value.
- Behavior must be considered in context rather than as an isolated event; a behavior may have only one or several functions.
- Analysis of communicative function must be conducted in a variety of situations across time to increase its accuracy.

THE MOTIVATION ASSESSMENT SCALE

(DURAND, 1986)

Designed to determine if a behavior indicates one of the following four functions:

1. Request a tangible item

2. Seek attention

3. Escape

4. Provide sensory input

(Overhead 17)

MEDIATOR ANALYSIS

Issues to address when conducting a mediator analysis:

1. Who works with the student?
2. How the student responds to the person?
3. How the person mediating the behavior responds to the student?
4. Time constraints.
5. Environmental constraints.
6. Level of expertise.
7. People or agencies currently or potentially involved with the student and the educational program.

(Overhead 18

MOTIVATIONAL ANALYSIS

1. Motivation is a highly individualized factor.

2. It is important to survey and identify potential reinforcers for an individual with dual sensory impairments.

3. When asking questions of significant individuals in the student's life, it is important to determine how they know the student's preferences.

(Overhead 19)

CONTENT OUTLINE

1. Rationale for Utilizing Positive Programming

2. Strategies for Implementing Positive Programming

3. The Role of Motivation in Positive Programming

(Overhead 20)

RATIONALE FOR UTILIZING POSITIVE PROGRAMMING

1. A gradual process for behavior change involving systematic instruction over time.

2. Has the potential for:

   - teaching new behaviors,

   - utilizing natural contingencies that enhance long-term maintenance,

   - preserving human dignity, and

   - having increased social validity.

STRATEGIES FOR IMPLEMENTING POSITIVE PROGRAMMING

1. Systematic programming is used for replacing an old behavior with a new behavior.

2. Analyzing the communicative function that a "problem" behavior may serve.

3. Teaching other behaviors which can substitute for the problematic behavior.

4. Reinforcing an incompatible behavior.

5. Assigning meaning to a behavior.

THE ROLE OF MOTIVATION IN POSITIVE PROGRAMMING

Consider:

1. "The criterion of the least dangerous assumption" (Donnellan, 1984).

2. An individual's need to feel in control of the environment.

(Overhead 23)

FACTORS THAT AFFECT MOTIVATION

1. Choice-making

2. Cause and effect

3. Means-end relationships

4. Time

5. Closure

(Overhead 24)

CONTENT OUTLINE

1. Schedules of Reinforcement

2. Chaining

3. Shaping

4. Modeling

5. Prompting

6. Data Collection

SCHEDULES OF REINFORCEMENT

1. Continuous reinforcement (CRF)
2. Fixed ratio (FR)
3. Variable ratio (VR)
4. Fixed interval (FI)
5. Variable interval (VI)
6. Variable interval or ratio schedules maintain behavior over a longer period of time than fixed interval or ratio schedules.

(Overhead 26)

SELECTION OF REINFORCERS

1. Select reinforcers that are potentially rewarding to the individual.

2. Consider reinforcers that involve the olfactory or tactile senses.

(Overhead 27)

CHAINING

- Chaining is the systematic teaching of a task after it has been analyzed.

- There are two types of chaining:

1. Serial chaining

    a. Forward chaining

    b. Backward chaining

2. Concurrent chaining (total task presentation)

(Overhead 28)

SHAPING

- Shaping is the development of a new behavior through the reinforcement of successive approximations to the desired behavior.

- Shaping is used when the target behavior is not present in the student's repertoire, but the student is capable of ultimately performing the activity.

- The steps involved in shaping are:

1. specifying the final desired behavior,
2. selecting the starting behavior, and
3. planning the successive steps.

MODELING

- Modeling is demonstrating the target behavior for the individual to imitate.

- Modeling can be effective with some individuals who have dual sensory and multiple impairments.

PROMPTING

- A prompt is assistance that may be given to the student before the occurrence of the target behavior (also referred to as a "cue" when it serves an antecedent function) or to correct a mistake.

- Prompts may be physical, verbal, or environmental.

- Prompts should usually be faded from the learning sequence systematically.

- Some students have more difficulty giving up certain types of prompts than others.

(Overhead 31)

DATA COLLECTION

- Target behaviors must be operationally defined.

- Staff persons collect data to determine whether there has been a change or lack of change in the target behaviors.

- Baseline data are collected on target behaviors prior to implementing a behavioral intervention.

- The selection of data collection systems depends on the type of target behaviors and the type of behavioral change that is desired.

(Overhead 32)

DATA COLLECTION SYSTEMS

1. Frequency recording
2. Duration recording
3. Time sampling
4. Scatter plot
5. Trial-by-trial
6. Anecdotal

(Overhead 33)

CONTENT OUTLINE

1. Differential Reinforcement of Other Behavior (DRO)
2. Differential Reinforcement of Low Rates of Responding (DRL)
3. Differential Reinforcement of Alternative Behaviors (Alt-R)
4. Stimulus Control
5. Instructional Control
6. Stimulus Change

(Overhead 34)

DIFFERENTIAL REINFORCEMENT OF OTHER BEHAVIOR (DRO)

- Receiving reinforcement for failing to exhibit the target behavior.

- The specific time interval that is used is important to the success of the DRO procedure.

(Overhead 35)

DIFFERENTIAL REINFORCEMENT OF LOW RATES OF RESPONDING (DRL)

DRL is used with behaviors that occur at a high rate.

Two variations of DRL:

1. The target behavior is reinforced only if it occurs after a specified interval of time since the last display of the behavior.
2. Reinforcement is given if fewer than a specified number of targeted responses occur during the specified time interval.

DIFFERENTIAL REINFORCEMENT OF ALTERNATIVE BEHAVIORS (ALT-R)

- The reinforcement of a behavior that is incompatible with the target behavior.

- Best demonstrated with an example of noncompliant behavior.

- For Alt-R to be effective, the "100% rule" must be satisfied.

(Overhead 37)

STIMULUS CONTROL

The occurrence of a behavior in the presence of a particular stimulus configuration.

(Overhead 38)

INSTRUCTIONAL CONTROL

A type of stimulus control in which the behavior occurs in the presence of, or after the presentation of an instructional cue.

STIMULUS CHANGE

- The introduction of a new stimulus or novel situation that results in a temporary reduction of the targeted behavior.

- Stimulus change may temporarily reduce the behavior so that a systematic procedure can be implemented.

(Overhead 40)

RELATED SERVICES AND THE TRANSDISCIPLINARY APPROACH

Parent and Service Provider Training Module

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1990

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I. General Information - Overview

A. Parent and Service Provider Training Module

Related Services and the Transdisciplinary Approach

B. Purpose of the Module

The purpose of this module is to assist parents and service providers in become more knowledgeable about the team structures that include delivery of therapeutic services for children and youth with dual sensory and multiple impairments. The content of the module will focus on issues related to transdisciplinary teamwork. Lectures and activities will be related to the following topics: a) functions and roles of team members; b) models of service delivery; and c) benefits of the transdisciplinary approach.

C. Intended Audience

This information is intended for parents, family members, and service providers of children and youth with dual sensory and multiple disabilities. Over the past several years, leaders in the field of special education have recognized the importance of focusing on the family unit, rather than on parents exclusively. Therefore, this module is appropriately conducted with parents, guardians, siblings, extended family members, friends, advocates, or service providers who are currently involved in the educational planning for individuals with disabilities. In many cases, it would be appropriate to include the student in this training experience. A decision to include the student should be made on an individual basis.

D. Level of Training

Awareness

E. Entry Level Skills

Participation in this awareness training session does not require any prerequisite or entry level skills.

F. General Outcome Competencies

Participants will receive information regarding:

1. the generic functions served by all team members when working with students who have dual sensory and multiple impairments;
2. roles and responsibilities of various team members;
3. implications of the "Related Service" section of P.L. 94-142;
4. predominant types of service delivery models used in schools; and
5. benefits of the transdisciplinary approach to education and habilitation.

G. Module Delivery Organization

1. Number of Lectures: 3
2. Amount of Time: Three ninety minute lectures for a total of four and one-half hours. Additionally, several group activities and opportunities for discussion are also included. The combination of lecture, group activities, and discussion results in a total training session length of approximately one and one-half days.
3. Materials and Equipment: Materials and equipment will vary depending upon the activities and presentation style of the trainer. It is recommended that the trainer use a variety of presentation materials and equipment (e.g., overhead transparencies, slides, and actual equipment used by members of each of the disciplines).

H. Special Instructions

1. The trainer should be sensitive when addressing disabling conditions of an individual by

acknowledging the individual first and the disabling condition second. For example, during presentations, the trainer should refer to "individuals with deaf-blindness (or dual sensory impairments) and multiple impairments" rather than a "deaf-blind individual." The two terms, "deaf-blindness" and "dual sensory impairments," are used interchangeably throughout the module.

2. The trainer should be aware of the use of professional jargon during presentations. This does not imply that essential vocabulary from the various disciplines should not be used. Basic terminology should be defined at the beginning of each training session as family members and service providers will need to learn some of this terminology to communicate effectively with each other. Trainers should encourage the participants to ask questions regarding unfamiliar terms and limit the use of sophisticated terminology. When possible, use familiar terms, such as "bend" instead of "flex" and "backlying" instead of "supine".

II. Training Instructions

A. Trainer Preparation

The trainer should be familiar with the basic principles presented in each training session. This can be accomplished by reading the literature suggested and communicating with various professionals. It is not important for the trainer to have expertise in all disciplines; however, it is necessary for the trainer to have experience as a team member.

B. How to Deliver the Module

It is recommended that the presentations include lectures, training activities, and discussion. Suggested training activities are listed under each content section. The trainer is encouraged to develop and use original resources to supplement the presentations.

C. Training Tips

Embedded within the text of the module are suggestions for ways in which the trainer can enhance participant attention and learning. These suggestions are typed in bold-faced italics and enclosed in a special bracket. Here is an example.

Pause here and ask participants to share any questions they may have.

III. Content - Part I: Functions and Roles of Team Members

A. Module Delivery Organization

1. Lecture Number: 1

2. Amount of Time: Ninety minutes

3. Specific Outcome Competencies

   Participants will receive information regarding:

   a. the importance of families as consumers of services
   b. generic functions served by all team members
   c. roles and responsibilities of team members with whom they are likely to interact
   d. the overlap among the various disciplines

B. Content Overview Outline

1. Families as Consumers of Professional Services

2. Functions of Educators and Related Service Professionals

3. Roles and Responsibilities of Team Members
   a. Occupational Therapist
   b. Orientation and Mobility Instructor
   c. Parent
   d. Physical Therapist
   e. Speech/Language Therapist
   f. Teacher

C. Suggested Readings for the Trainer

Sections of the content in the readings listed below served as the basis for development of this module. The trainer will need to obtain these resources and master the content prior to delivering the module.

Campbell, P. (1987). The integrated programming team: An approach for coordinating professionals of various disciplines in programs for students with severe and multiple disabilities. *The Journal of The Association for Persons with Severe Handicaps, 12*, 107-116.

Giangreco, M. F. (1990). Making related service decisions for students with severe disabilities: Roles, criteria, and authority. *Journal of the Association for Persons with Severe Handicaps, 15* (1), 22-31.

Goetz, L., Guess, D., & Stremel-Campbell, K. (1987). *Innovative program design for individuals with dual sensory impairments.* Baltimore: Paul H. Brookes.

Orelove, F. P., & Sobsey, D. (In press). Designing transdisciplinary services. In F. P. Orelove & D. Sobsey (Eds.), *Educating children with multiple disabilities: A transdisciplinary approach* (Second edition, pp. 1-24). Baltimore: Paul H. Brookes.

D. Introduction to the Module, Part I

Introduce participants to this portion of the module by displaying Overhead 1. Refer to it as you review the following topics with participants. Next, you may want to say: "For the next hour and a half we will cover the following topics:

1. ***Families as consumers of professional services***
2. ***Functions of educators and related service professionals***
3. ***Roles and responsibilities of team members"***

E. Specific Content

1. Families as Consumers of Professional Services

Begin this session by asking participants the following questions:

1. ***"Why is it important for families to be involved with professionals who provide services to their children?"***
2. ***"What can the family as a consumer of professional services contribute?"***

As participants respond, write their answers on a blank transparency, flip chart, or chalkboard. Add your own content if it is not covered by participants.

The following information listed below is a list of reasons why the role of families as consumers should be emphasized (Giangreco, Cloninger, & Iverson, 1990):

a. Families know many things about their children better than anyone else.

b. Families have the greatest vested interest in seeing their children learn.

c. Families are likely to include the only adults involved with the educational or therapeutic programs of their children throughout their entire school career.

d. Families have access to information about the capabilities of their children in home and community settings to which others have no access.

e. Families have the ability to influence the quality of educational services provided in their community.

f. Families must live with the outcomes of decisions made by educational or therapeutic teams 24 hours a day, 365 days a year.

2. Functions of Educators and Related Service Professionals

Display Overhead 2 and explain each item using the following narrative and examples.

The following functions may be carried out by any combination of team members. Each function is potentially important, though its degree of importance may vary depending on the individual needs of the child or youth. These are:

a. development of adaptations to encourage functional participation (e.g., selection or design of a microswitch to activate a blender);

b. facilitation of academic and functional skills relevant to the current and future needs of the student (e.g., development of a mobility program);

c. reciprocal consultation with colleagues;

d. removal or modification of barriers to participation (e.g., negotiating with Medicaid to enable purchase of a one-arm drive wheelchair);

e. prevention of regression (in sensory, physical, cognitive, or social/behavioral areas) or pain;

f. support and resource to families;

g. remediation or restoration of identified deficits;

h. promotion of sequenced developmental skills within motor, cognitive, and social domains through functional activities (Uzgiris & Hunt, 1978; Wood, Combs, Gunn, & Weller, 1986);

i. assessment and subsequent educational or therapeutic program development, implementation, and evaluation; and

j. consensus decision-making.

3. Roles and Responsibilities among Team Members

Roles of team members have been changing significantly over the past few years. In the past, specialists such as occupational, physical, and speech therapists worked in physically isolated areas (e.g., the "therapy" room) and pursued goals which were narrowly defined by their particular discipline. Today, in state-of-the-art programs, these and other specialists are synthesizing their competencies within a wider variety of academic and functional activities in ever increasing types of environments [e.g., general education classrooms, other school settings, stores, restaurants, public buses, streets and roads, community work sites, recreational locations, or homes (Rainforth & York, 1987; York, Giangreco, Macdonald, & Vandercook, in press)].

Display Overhead 3 and say:
"The following professions are those most often represented on teams in educational settings."

The following descriptions are general and do not reflect all of the activities conducted by various professionals. These descriptions are designed to give the audience a general feeling for types of roles assumed by the different professionals rather than to provide a comprehensive overview. The members of an educational team are determined by the particular needs of the student. Therefore, other professionals also may be involved (e.g., psychologist, audiologist, social worker, nurse, or vocational specialist) for some children.

Refer to Overhead 3. The trainer should include descriptions of professionals that match needs of the participants. For example, students with medical complications may also have nurses and nutritionists as contributing team members. Ask participants to identify those professionals who serve their children or students.

a. Occupational Therapist (OT). Occupational therapists provide evaluation of and intervention for problems that interfere with functional performance in individuals impaired by physical injury, emotional disorder, congenital, or developmental disability. They use a program of purposeful activities to develop, improve, restore, or maintain adaptive skills. The activities are designed to achieve maximal physical, cognitive, or emotional functioning of individuals in school or other daily life experiences (American Occupational Therapy Association, 1987). Only occupational therapists who meet the certification standards of the American Occupational Therapy Association (AOTA) can provide occupational therapy services.

In school settings, occupational therapists are frequently engaged in activities, such as developing proper seating, developing positioning and handling strategies, designing adaptive equipment, designing handsplints and other orthotic devices, teaching self care and daily living skills, developing feeding programs, developing handwriting activities, and working on a variety of other functional, fine motor hand use activities. Occupational therapists also may be found supporting recreational and vocational programs, as well as working within social/emotional domains. Traditionally, OT's have relied on the use of purposeful activities to attain therapeutic outcomes.

NOTE: SOME STATES REQUIRE A PHYSICIAN'S PRESCRIPTION FOR OT SERVICES.

b. Orientation and Mobility Instructor (O & M). Orientation and mobility instructors provide evaluation and intervention related to the abilities of students with visual impairments to move through their environment. In addition, O & M instructors teach protective techniques, search techniques, safely orienting to the physical environment, and concept development. These skills assist students in developing independent travel within home, school, or neighborhood environments. O & M instructors also make recommendations regarding travel aids and equipment adaptations, such as marking a stove, or folding paper money for tactile identification. Much of the O & M instructor's work involves analysis of frequented environments, as well as instruction in those actual environments.

c. Parent. Parents and family members are essential team members. Family members provide valuable input and insights into educational planning by:

i. assisting in the determination of educational and functional priorities;
ii. reporting skill levels in home and other nonschool environments;
iii. identifying student preferences;
iv. highlighting student strengths;
v. sharing the family's aspirations and dreams for the student in the future;
vi. relaying historical information that may affect planning; and
vii. offering additional input that would typically be unavailable to school personnel.

Family members also may participate in the actual implementation and evaluation of certain instructional programs. Parent participation in program implementation should be individually determined based on the needs, values, and resources of the family. Parents have the unique opportunity and ability to place incoming recommendations into a meaningful historical and social context.

d. Physical Therapist (PT). "Physical therapy is a health profession concerned with providing services that prevent or minimize disability, relieve pain, develop and improve sensory and motor function, control postural deviations, and establish and maintain maximum performance within the individual's capabilities. Physical therapy services within the educational environment are directed toward the development and maintenance of the disabled child's physical potential for independence in all education related activities. The physical therapist is a licensed health professional who has completed a program in physical therapy that has been accredited by a recognized accrediting agency" (American Physical Therapy Association, 1985). Physical therapists may use, "physical, chemical, or mechanical means including, but not limited to heat, cold, light, air, water, sound, electricity, massage, mobilization, and therapeutic exercise with or without assistive devices . . ." (American Physical Therapy Association, 1987).

In school settings, physical therapists are frequently engaged in activities, such as developing proper seating, positioning and handling, gait training, mobility instruction (including wheelchair use), selection and use of adaptive equipment, movement facilitation, maintaining joint flexibility and range of motion, gross motor programming, skin care to prevent skin breakdown, cardiovascular and cardiomuscular fitness, and a variety of other activities designed to assist students in benefiting from educational programs.

NOTE: SOME STATES REQUIRE A PHYSICIAN'S PRESCRIPTION FOR PT SERVICES.

Provide some examples or demonstrate some of these activities. Have some equipment available for a hands-on experience.

e. Speech/Language Therapist (S/LT). Speech/language therapists address areas such as disorders in fluency, voice, articulation, and expressive and receptive language. They may utilize a wide variety of nonvocal communication modes and symbol systems. For example, sign communication systems (e.g., manually coded English) and sign language (e.g., ASL), as well as other types of nonsymbolic and symbolic communication systems may be used. The speech/language therapist determines the child or youth's present level of functioning in terms of communication skills, and develops and implements communication programs that can be implemented by the entire team within a variety of relevant contexts. This communication program may include speech or nonspeech modes. Speech/language therapists also may develop and implement feeding programs and other activities related to oral motor functions, and social skills development.

Provide an example of how a speech/language therapist would perform some of these tasks in collaboration with other professionals.

f. Teacher (this may include regular educators, special educators, resource or consulting teachers, and teachers who specialize in vision or hearing needs). The role of the teacher involves developing and implementing educational programs in conjunction with other team members. As noted by Bricker (1976), the teacher often assumes the role of "educational synthesizer." Since the teacher is likely to be the staff member who has primary responsibility for the child or youth on a daily basis, he would be the logical person to oversee implementation and evaluation of the student's overall program. This role of synthesizer does not imply disproportionate decision-making authority or responsibility. Accountability should be clarified and agreed to by team members. In addition to the general functions served by all team members (e.g., facilitation of academic and functional skills, adaptations, or reciprocal consultation), the teacher is also responsible for organizing the classroom environment with input from the team, assisting in the determination of an appropriate mixture of instructional experiences (e.g., individual, small group, and large group), providing systematic instruction, developing opportunities for interactions with nondisabled peers, as well as training and supervising paraprofessional staff. This role requires frequent, ongoing communication with team members, including students' families. Teachers may work within the range of academic curricula, as well as the life areas of independent living, community life, work, recreation/leisure, and regular education.

Distribute copies of Handout 1 to participants. Spend a few minutes reviewing the content. Ask participants if they have questions regarding the professional and support organizations listed.

g. Overlap of roles among various team members - refer to Table 1 - Common Areas of Role Overlap (Overhead 4).

Display Overhead 4 and say: "The overlaps shown are meant to familiarize you with common areas of overlap. This is not intended to provide a comprehensive list of overlaps." Refer to Overhead 4 as you point out some of the overlaps.

F. Training Activities

1. Have professionals (in the audience) from the various disciplines address participants on the principle aspects of their jobs.

2. Show slides or videotapes from local school programs which depict examples of students working with team members in various settings.

3. Have participants share examples of the kinds of activities team members engage in with their

children or students.

4. Bring a wide variety of adaptive equipment for the various disciplines [e.g., goniometer (PT); signature card, Braille writer, or magnifying glass (teacher of students with visual impairments); built-up spoon handle, plate guard, cut-out cup, or adapted switch (OT); or auditory trainer or communication board (S/LT).] Have participants sort items by the discipline with which they are associated. Discuss names and functions of equipment.

IV. Content - Part II: Models of Service Delivery

A. Module Delivery Organization

1. Lecture Number: 2

2. Amount of Time: Ninety minutes

3. Specific Outcome Competencies

   Participants will receive information regarding:

   a. the federal definition of "related services" and the characteristics of those services;

   b. characteristics of a team;

   c. some of the common value systems used by professionals and parents and how these can affect teams; and

   d. the evolution of team interactions [e.g., multidisciplinary, interdisciplinary, and transdisciplinary (or integrated therapy)].

B. Content Overview Outline

1. Definition and Interpretation of "Related Services" from P.L. 94-142

2. Forms of Team Interaction
   - a. Multidisciplinary
   - b. Interdisciplinary
   - c. Transdisciplinary (or Integrated Therapy)

3. Mislabeling of Teams

4. Attitudes of Team Members and Their Effect on Team Interactions and Services

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a. More-is-Better

b. Return-on-Investment

c. Only-as-Special-as-Necessary

5. Approaches to Measurement

C. Suggested Readings for the Trainer

Giangreco, M. (1986). Delivery of therapeutic services in special education programs for learners with severe handicaps. *Physical and Occupational Therapy in Pediatrics,6* (2) 5-15.

Giangreco, M., York, J., & Rainforth, B. (1989). Providing related services to learners with severe handicaps in educational settings: Pursuing the least restrictive option. *Pediatric Physical Therapy, 1* (2), 55-63.

Giangreco, M., Edelman, S., & Dennis, R. (1991). Common professional practices that interfere with the integrated delivery of related services. *Remedial and Special Education,* 12(2), 14-24.

Hutchinson, D.J. (1978). The transdisciplinary approach. In J. Curry & K. Peppe (Eds.), *Mental retardation: Nursing approaches to care* (pp. 65-74). St. Louis, MO: C.V. Mosby Co.

Lehr, D., & Haubrich, P. (1986). Legal precedents for students with severe handicaps. *Exceptional Children, 52*, 358-365.

Lyon, S., & Lyon, G. (1980). Team functioning and staff development: A role release approach to providing integrated educational services for severely handicapped students. *Journal of the Association for the Severely Handicapped, 5*, 251-263.

Osborn, A. (1984). How the courts have interpreted the related services mandate. *Exceptional Children, 51*, 249-252.

Rainforth, B., & York, J. (1987). Integrating related services in community instruction. *Journal of the Association for Persons with Severe Handicaps, 12*, 190-198.

Sternat, J., Messina, R., Nietupski, J., Lyon, S., & Brown, L. (1977). Occupational and physical therapy services for severely handicapped students: Toward a naturalized public school service delivery model. In E. Sontag, J. Smith, & N. Certo (Eds.), *Educational programming for the* *severely and profoundly handicapped* (pp. 263-278). Reston, VA: Council for Exceptional Children, Division of Mental Retardation.

Thousand, J., Fox, T., Reid, R., Godek, J., Williams, W., & Fox, W. (1986). Developing the collaborative teaming process. *The homecoming model: Educating students who present intensive educational challenges within regular education environments* (pp. 33-36). Burlington: Center for Developmental Disabilities, University of Vermont.

Wolfensberger, W. (1977). *The principle of normalization in human services.* Ontario, Canada: G. Allan Roeher Institute.

D. Introduction to the Module, Part II

Introduce participants to this section of the module by displaying Overhead 5. Refer to it as you review topics with participants. Next, you may want to say: "For the next hour and a half we will cover the following:

1. ***The definition and interpretation of "related services" from PL 94-142***
2. ***Forms of team interactions***
3. ***The mislabeling of teams***
4. ***Attitudes of team members and their effect on the team process***
5. ***Approaches to measurement"***

E. Specific Content

1. Definition and Interpretation of "Related Services" from PL 94-142

"The term 'related services' means transportation and such developmental, corrective and other supportive services (including speech pathology and audiology, psychological services, physical and occupational therapy, recreation, and medical and counseling services, except that such medical services shall be for diagnostic and evaluation purposes only) as may be required to assist a handicapped child to benefit from special education, and includes the early identification and assessment of handicapping conditions in children." PL 94-142 (1975).

The Code of Federal Regulations 34 & 300.13 & 300.14 provide more in-depth definitions than

PL 94-142. [For a review of how related services have been interpreted by the courts see Osborne (1984).] The following is a summary of main points concerning related services.

a. Related services are provided to students with disabling conditions if the recommended services are required for students to benefit from special education. The courts have extended the interpretation of related services to include access to education, and in some cases, avoidance of unduly restrictive educational placements.

Provide an example here.

b. Variations exist from state to state regarding the provision of related services.

c. Schools generally are not required to provide services that are not judged to be essential for students to benefit from special education. The test for determination of related service delivery has been that the absence of the related service makes it unduly difficult or impossible for students to benefit from special education or participation in school activities.

Provide an example here.

d. Schools generally are not required to provide services that can be provided appropriately during nonschool hours.

Provide an example here.

e. Services (e.g., clean intermittent catheterization or tube feeding) considered to be school health services provided by a school nurse or other qualified person can be considered as related services.

f. Schools are not required to provide services that only can be administered by a licensed physician, except for diagnostic or evaluation purposes.

2. Forms of Team Interactions

Display Overhead 6. Next, you man want to say, "team interactions may be different, depending on goals of the team and site of service delivery We will review three forms of group interactions that might be used by a team."

Display Overhead 7 and say, "the steps listed on this overhead transparency highlight the way a multidisciplinary team functions."

a. Multidisciplinary. Historically, the early forms of professional interaction were considered multidisciplinary, merely indicating that many disciplines were involved. This approach was an improvement over previous forms of service delivery because it brought to bear the varied skills of professionals from several disciplines. Unfortunately, the multidisciplinary approach of having professionals from many disciplines work with the same student in relative isolation from each other had serious limitations. The multidisciplinary approach did not meet the federal intent of supporting a student's ability to benefit from an educational program nor did it embody a mechanism for interactions among professionals. The multidisciplinary approach promoted highly individualistic professional behavior and seemed to perpetuate a professional-client relationship which tended to view the student as an affected part, condition, disease, or syndrome rather than a whole person.

Display Overhead 8 and say, "this overhead transparency highlights the functioning of an interdisciplinary team."

b. Interdisciplinary. In recognition of the drawbacks to multidisciplinary models, some professionals adopted interdisciplinary approaches. The interdisciplinary model, as the prefix of the name suggests, represented reciprocal interactions among or between professionals from a variety of disciplines. This occurred while attributes of the multidisciplinary approach were retained. Professionals from various disciplines created mechanisms for communicating with each other about their activities including a system of case management. Both the multidisciplinary and interdisciplinary models typically represent "discipline-referenced" approaches in which decisions regarding assessment, planning, intervention, evaluation, and team interactions are driven by an individual disciplinary orientation (e.g., education, OT, PT, and S/LT), rather than by a shared centralized focus, such as the needs of the student within the context of her environment.

Display Overhead 9 and say, "this overhead transparency highlights the functioning of a transdisciplinary team (or integrated therapy)."

c. Transdisciplinary and Integrated Therapy. The need for increased coordination among professionals evolved a step further with the development of the transdisciplinary model. Many professionals found it difficult to integrate the knowledge and skills from various disciplines, especially when they lacked a common goal. Additionally, it was difficult for some families to communicate with a range of different professionals. Therefore, proponents of the transdisciplinary approach added two primary characteristics to team service delivery. The first was collaboration based upon shared goals which grew out of a common framework, in essence the professionals began to view the child or youth as a complete person rather than a series of affected "parts" (Hutchinson, 1978). Secondly, program implementation included "role release," during which specialists provided training to a small number of persons outside of their respective disciplines to carry out selected services.

Role release permitted competent professionals to train and monitor specialized program implementation by others, thus allowing services to be provided in an indirect manner. This allowed knowledge and skills from a broad range of disciplines to be delivered while minimizing the number of persons interacting with a particular child or youth. Further, the transdisciplinary team model permits infusion of therapeutic strategies into the context of functional activities. The transdisciplinary approach represented significant changes in how professionals interacted with each other. In this approach, discipline-referenced behavior was highly undesirable. Professionals had to be willing to place their disciplinary orientations in a secondary position to the agreed upon team goals in which the child or youth was viewed in the context of his or her environment. Transdisciplinary teamwork could not function properly with discipline-referenced professionals behaving in highly individualistic or competitive ways. Further, teamwork hinged upon the maturity of the members to demonstrate characteristics necessary for participation in a team: entering the relationship freely and equally, foresight, patience, politeness, speaking, arguing, and listening. The interdependencies of the transdisciplinary model emphasized the importance of collaboration.

The transdisciplinary model also promoted significantly different professional-client relationships (assuming that the clients were both the student and his or her parents). In the older multidisciplinary and interdisciplinary models, the professional delivered treatment to the student directly. Parents were relegated to passive observer roles and were rarely consulted for their input. This was based upon the notion that the professional knew what should be done (i.e., standard practice) and was being paid to deliver direct services. In the transdisciplinary model, professionals increasingly realized that while disciplinary knowledge and skills were important, selected examples of both knowledge and skill could be released to others. This also was necessary in a pragmatic sense because many of the procedures to be carried out with the student needed to be done more frequently than the specialists could manage. Limiting knowledge and skills to the specialist was inherently a restrictive condition. In addition to releasing aspects of their roles to others, specialists increasingly began to view the consumer as integral to the team process. This represented a major departure from earlier models where consumers were the clientele to be served, but not included as partners. By including families as team members, professionals acknowledged the vested interest, special knowledge, and potential input available through families.

Display Overhead 10 as you review the following topics with participants.

The characteristics of the transdisciplinary approach had logical application to educational environments. P.L. 94-142 stated that related services, such as OT, PT, and S/LT were to be provided, "...as required in order to assist a handicapped child to benefit from special education." Sternat et al., (1977) described a variation of the transdisciplinary approach which they referred to as, "integrated therapy." Integrated therapy extended the foundations of role release and shared focus inherent in the transdisciplinary approach by incorporating disciplinary expertise to the planning process in how to achieve shared goals. For example, in the early forms of transdisciplinary planning, a speech/language therapist may have had the responsibility for planning an augmentative communication program for a student who was nonverbal. After designing the plan the specialist releases primary implementation to those who interact with the student most frequently (e.g., teacher, aides, and family members) and provides training as necessary. In an integrated therapy approach, the team would agree that communication was a priority for the student, but within the planning process, a question would be posed to all relevant disciplines (not just the speech/language therapist). "What specialized knowledge can be shared with each other to enhance the student's acquisition of communication objectives?" That is, team members learned to share knowledge and skills from their respective disciplines to enhance acquisition of shared goals. For example, the PT may suggest a position to encourage head control that may permit the student to orient toward the augmentative communication device, and information from the itinerant vision teacher may guide placement of the device within the student's visual field.

A second characteristic of the integrated therapy model is implementation of specific therapeutic techniques in a synthesized manner within functional activities in instructional or natural contexts (Giangreco, York, & Rainforth, 1987). For example, in a study conducted by Giangreco (1986), range-of-motion exercises and manual vibration techniques which are traditionally implemented in an isolated therapy session were incorporated into an instructional lesson to facilitate a student's use of an adapted microswitch to activate a tape player. The data indicated that by incorporating the therapeutic techniques in a synthesized, rather than isolated fashion, therapeutic techniques facilitated improved performance on the switch-activation task.

NOTE: CERTAIN STUDENTS MAY REQUIRE SPECIFIC THERAPEUTIC OR OTHER SPECIALIZED SERVICES WHICH ARE NOT RELATED TO SUPPORTING THEIR EDUCATIONAL PROGRAM. IT IS SUGGESTED THAT THOSE STUDENTS RECEIVE NEEDED SERVICES THROUGH NONSCHOOL AGENCIES DURING NONSCHOOL HOURS.

3. Mislabeling of Teams

The term "team" is popular. Almost every educational or habilitative program will claim to use a "team" approach. While most of these programs are well-intentioned and possess some aspects of a team, few meet all of the criteria for a team as listed in the previous section. It is important that families and service providers be aware of the characteristics of a team and potential mislabeling of certain school activities as teamwork. The absence of some or all team characteristics can be an indicator of program quality. Without "real" teamwork, programs may be disjointed and less effective.

4. Attitudes of Team Members and their Effect on the Team Process

The way team members interact with each other and the ideas they use to make decisions about persons with disabilities are influenced by a number of factors. Personal and professional values or attitudes can have a significant impact. Listed on the next overhead transparency are some commonly held attitudes and their potential effect on service delivery.

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Display Overhead 11 as you review the following information with participants.

These attitudes are based on extensive observations of actual teams as well as 46 semi-structured interviews conducted with special educators, communication specialists, occupational therapists, physical therapists and parents who are involved with students who have severe disabling conditions. Many professionals combine various aspects of the following value systems. Many individuals function in more than one value system exclusively. Undoubtedly other value systems or variations exist; these were the ones most prevalent during interviews and observations that were conducted.

a. The "more-is-better" approach. Due to professional training, or a genuine belief that services offered by one's discipline are highly valuable and necessary, there are a group of professionals and parents who pursue a "more-is-better" approach. These individuals are likely to perceive that the vast majority of students who are identified with dual sensory and multiple impairments need extensive specialized services. These individuals tend to operate based on the assumption that if two sessions of "therapy" per week are good, three would necessarily be better, and five would be better yet. Such individuals are more likely to view the function of the specialized services in isolation from the total school or life experiences of students. Services based on this approach may actually have a negative impact on students, by separating them unnecessarily from typical school routines, activities and interactions.

"More-is-better" proponents are likely to support the provision of direct services based upon the belief that the knowledge and expertise of specialists is so advanced that the specialist's role cannot be released to others. This approach can promote unnecessary dependency upon the presence of the specialist. "More-is-better" proponents may support or practice any of the functions of related services personnel listed earlier (e.g., consultation, prevention, adaptation, remediation, and support to families). Professionals who adhere to the "more-is-better approach" generally act out of genuine concern for students and also may be highly competent in their disciplines.

b. "Return-on-investment" approach. A second approach is the "return-on-investment" model. The "return-on-investment" supporter often acts based on the belief that resources are scarce. This belief seems to be substantiated by national and regional reports which indicate a growing shortage of related services professionals and large caseloads for those already employed. Given the scarcity of human resources to meet seemingly large needs, decisions must be made about how services are to be delivered, to whom, and toward what end. The "return-on-investment" proponent may reason that expertise must be provided to those students who will benefit most from specialized support services. "Return-on-investment" approaches can be discriminatory toward persons who have the most severe disabilities.

In locations where resources are scarce, the "return-on-investment" proponents may avoid recommending services for students with the most severe disabilities because they believe "it is a waste of time," and "they aren't going to amount to anything anyway." The dangers of this type of discrimination are obvious. Consumers may not think of the denial or termination of service as discriminatory when it is masked by the claim of professional expertise.

c. The "only-as-special-as-necessary" approach (Biklen, 1987). The "only-as-special-as-necessary" approach is rooted in the theory of normalization (Wolfensberger, 1977). In reference to the provision of related services in the schools, highly specialized therapeutic techniques and services may be viewed as stigmatizing events which serve to separate and isolate persons with disabilities. This concern was raised by members of Congress in the 1985 annual report on the implementation of P.L. 94-142. In this report, a question was asked regarding students with learning disabilities who were unnecessarily being subjected to atypical and stigmatizing school experiences when placed in "special classes." The "only-as-special-as-necessary" proponent views students within the context of there environments and recognizes the interrelationships among the varied components of school programs. The "only-as-special-as-necessary" supporter advocates minimally intrusive approaches that are most likely to facilitate inclusion in typical school activities with nondisabled peers. The "only-as-special-as-necessary" supporter is likely to request specialized related services only when deemed absolutely necessary; consultative supports that meet the same functions as potentially more intrusive services are usually preferred. When specialized related services are provided, the "only-as-special-as-necessary" proponent advocates for services which are most normalized. For example, indirect services which are blended within the routine of typical daily activities would be pursued before a recommendation for the traditional, pull-out approach to the delivery of services would be made.

As students with severe disabilities increasingly become part of general attendance schools and classes, these therapy issues become more important as quality indicators. At times, the "only-as-special-as-necessary" proponent is criticized for devaluing the expertise and autonomy of disciplines. It is understandable why this perception might evolve since the "only-as-special-as-necessary" proponent is unlikely to accept recommendations for specialized and atypical services simply because a related service specialist has made such a recommendation. This may create friction among team members. The "only-as-special-as-necessary" proponent may be viewed as a threat and may be perceived negatively as questions about the value or mode of related service delivery are raised. The potential for conflict is greatest when the "only-as-special-as-necessary" supporter encounters the "more-is-better" proponent. In some instances, the "only-as-special-as-necessary" supporter and the "return-on-investment" proponent may end up in agreement about the services to be delivered, but for quite different reasons. The "only-as-special-as-necessary" proponent values the competencies of the related service disciplines, but always views their involvement in the context of a broader scope. In this approach, skill development is viewed as a means to an end with the realization that the ends can be achieved in more than one way. The "only-as-special-as-necessary" proponent strives for the development of opportunities for maximal participation of persons with disabilities within the mainstream of community life.

While the discussion of value systems was presented in terms of professionals, parents often enter the team process with equally strong values regarding the use of special services. Parents can pursue the "more-is-better" approach, as well as professionals. Ask if any parent participants would be willing to share the value systems they bring to team meetings and inquire if their values were influenced by the information presented.

5. Approaches to Measurement

In addition to differences in value systems, another potential topic of disagreement between team members is selection of an evaluation system to measure student progress toward acquisition of a unified set of goals. Some related services professionals select evaluation measures that compare student progress with a standard derived from normal development. Other team members may recommend that each student's progress throughout the school year be measured relative only to that student's starting point for each goal. Regardless of the standard of comparison, it is recommended that team members test the effectiveness of their intervention strategies by quantitative and/or qualitative methods of data collection. Examples of quantitative measures include the duration of head erect behavior (e.g., in minutes) or the number of times a student reaches for a utensil during mealtime. An example of a qualitative method of data collection is measurement of a student's ability to activate a microswitch without excessive "overflow" of abnormal muscle tone to other parts of the body. More recently there has been an emphasis on evaluation that references student progress to his/her quality of life (Fabian, 1991; Giangreco, Cloninger, & Iverson, in preparation; Horner, 1991; Meyer & Janney, 1989).

Data collection can be a powerful and effective tool for evaluation of progress toward achievement of identified outcomes and to assist in decision-making. It is most effective when applied to relevant and well designed intervention or treatment plans.

F. Training Activities

1. Have participants indicate what types of teams they interact with at this time (e.g., no team, multidisciplinary, interdisciplinary, or transdisciplinary).

2. Have participants express their opinions on the roles they would like to assume within the team.

3. Have the participants select two priority educational activities that are relevant to a specific student (e.g., making purchases, communicating basic wants and needs, or expanding leisure skill repertoire) and then brainstorm potential input from the various disciplines in an integrated therapy model by asking the question, "What specialized knowledge or skills can be implemented by the classroom staff in the context of the lesson that will assist the student in attaining the objectives?"

G. Scenario/Vignette

Julie, age 15, attends Hamilton High School along with 465 other students. In addition to a moderate hearing and vision impairment, she experiences increased muscle tone due to cerebral palsy. As indicated in her Individualized Education Program (IEP), Julie receives related services from a physical therapist, a speech and language therapist, and itinerant vision teacher.

Each professional assesses Julie individually and plans a program based on those data. The specialists conduct their intervention plans in therapy rooms. For example, the physical therapist conducts range-of-motion exercises on Julie's upper and lower extremities three times a week for 30 minutes. The itinerant vision teacher works with the speech/language therapist, as well as Julie on using low vision aids to better view her communication board.

Mr. Fiorini, the Special Education Director for the school district, indicated that a team approach is utilized at Hamilton High School. He stated that each specialist writes goals and then shares them with the other team members at the annual IEP meeting.

After reading this scenario/vignette, have participants answer the following questions:

1. What type of service delivery model is being implemented?

2. What are some of the drawbacks to this approach?

3. What aspects of Julie's current service delivery system require modification to exemplify a transdisciplinary model with integrated therapy?

V. Content - Part III: Characteristics and Benefits of a Transdisciplinary Approach

A. Module Delivery Organization

1. Lecture Number: 3

2. Amount of Time: Ninety minutes

3. Specific Outcome Competencies

   Participants will receive information regarding benefits of the transdisciplinary team approach to education and habilitation for;

   a. students with disabling conditions,
   b. families of students with disabling conditions,
   c. professional staff members,
   d. school systems, and
   e. the community.

B. Content Overview Outline

1. Characteristics of a Team

2. Benefits of the Transdisciplinary Approach for Students

3. Benefits of the Transdisciplinary Approach for Families

4. Benefits of the Transdisciplinary Approach for Professionals

5. Benefits of the Transdisciplinary Approach for School Systems and the Community

C. Suggested Readings for the Trainer

Albano, M., Cox, B., York, J., & York, R. (1981). Educational teams for students with severe and multiple handicaps. In R. York, W. Schofield, D. Donder, D. Ryndak, & B. Reguly (Eds.), *Organizing and implementing services for students with severe and multiple handicaps* (pp. 23-34). Springfield: Illinois State Board of Education.

Giangreco, M. (1986). Effects of integrated therapy: A pilot study. *Journal of the Association for Persons with Severe Handicaps, 11*, 205-208.

Sears, C. (1981). The transdisciplinary approach: A process of compliance with Public Law 94-142. *Journal of the Association for the Severely Handicapped, 6*, 22-29.

York, J., Rainforth, B., & Giangreco, M. (1990). Transdisciplinary teamwork and integrated therapy: Clarifying the misconceptions. *Pediatric Physical Therapy, 2*(2), 73-79.

D. Introduction to the Module, Part III

Introduce participants to this portion of the module by displaying Overhead 12. Refer to it as you review topics with participants. Next, you may want to say: "For the next hour and a-half, we will focus on the benefits of the transdisciplinary service model including;

1. ***Characteristics of a team***
2. ***Benefits for students***
3. ***Benefits for families***
4. ***Benefits for professionals***
5. ***Benefits for schools and communities"***

E. Specific Content

Ask participants to review the definition of "transdisciplinary" as you present the following information.

1. Characteristics of a Team
   a. A team has two or more members who possess various skills that may serve different functions, thereby allowing the body of theory and skills of all team members to be expanded.

b. Team members develop a common framework and purposefully pursue a unified set of goals.

Provide an example here.

c. Team members engage in problem-solving and collaborative activities to attain the unified set of goals.

d. Team resources are shared and allocated to attain the goals.

e. Interactions among team members are designed to complement each other and increase effectiveness.

f. The relative effectiveness of the team is judged by how well the group works together to achieve the unified set of goals.

From personal experiences, have participants share characteristics of groups that either had or did not have "team" characteristics as noted in the above information. For example, related to groups that worked effectively as teams, identify characteristics that contributed to their effectiveness.

2. Benefits of the Transdisciplinary Approach for Students

There are three interrelated benefits of the transdisciplinary approach for students served. The first and most important benefit is that this model results in synthesized delivery of therapeutic techniques throughout the student's daily instructional routine. This pattern of service delivery differs from more traditional models in which a series of related services professionals conduct therapeutic techniques with a student separate from ongoing activities. The more consistent use of specialized techniques whenever and wherever they may improve function may enhance the therapeutic effect obtained from the various techniques.

The second benefit of this approach is highly related to the first in that specialized techniques are implemented on a longitudinal (i.e., long term) rather than episodic (i.e., occasional) basis.

The use of specialized techniques by the primary service provider (typically the teacher) all day, every day, may prove to be more effective than the same specialized technique implemented two or three times per week in isolation or in a nonfunctional context.

The third and final benefit of the transdisciplinary approach for students is a reduction in the number of adults who deliver direct services. Most therapeutic services are conducted by one (sometimes two or three) primary service providers. This arrangement reduces the possibility of inconsistent instruction across multiple team members.

3. Benefits of the Transdisciplinary Approach for Families

There are two primary benefits of the transdisciplinary model for families. The first is a reduction in the number of professionals with whom the family must interact. A primary service provider is selected for each student. This professional (sometimes called a case manager) coordinates the contributions of all team members over all educational programs of students. Also, the case manager often serves as the primary link to the family.

The case manager is in a unique position to interpret each student's set of unified goals for parents and other family members. Other team members are available, however, at the request of family members.

The second benefit for families is the likelihood that they too will have the opportunity to learn specialized knowledge and skills from a variety of disciplines. Family members may incorporate these new skills into home and community activities as appropriate.

4. Benefits of the Transdisciplinary Approach for Professionals

The primary benefit of the transdisciplinary approach for professionals is the opportunity to be ongoing "learners" through their interactions with families and professionals from other disciplines. Team members may learn disciplinary knowledge and skills from one another and may also enhance their interpersonal communication skills though the dynamics of the team process.

5. Benefits of the Transdisciplinary Approach for School Systems and Communities

Finally, the transdisciplinary model may also be of benefit to school systems and the community. This model is inherently more flexible than direct service models thereby reducing school or class scheduling conflicts. Additionally, the negative effects of staff turnover or vacancies may be minimized because the specialized knowledge and skills of each team member have been shared.

F. Training Activities

1. Have a teacher, parent, related service professional, or student who has positive experiences with transdisciplinary teams speak to the group.

2. Have participants share personal experiences indicating how transdisciplinary team experiences benefitted their student, child, or themselves (i.e., if any participants have been involved in transdisciplinary service delivery).

3. Have participants discuss ways to approach school officials about entertaining the idea of developing more transdisciplinary approaches in the school.

G. Scenario/Vignette

Brad is 14-years-old. He had attended Grover Cleveland Junior High School for the past two and one-half years. Brad has a severe vision impairment, a moderate hearing impairment, a seizure disorder, and cerebral palsy. Brad receives services from an occupational therapist, a mobility instructor, a physical therapist, and a speech/language therapist. These four specialists meet with the special education teacher, general education teachers, and Brad's mother on a regular basis to discuss Brad's progress and to develop new goals when appropriate.

All of the team members share assessment data and plan a program that can be implemented in the classroom or in the context of a natural routine (e.g., a community-based instructional site). Team members share their expertise and train others to carry out programs where appropriate. This results in a more holistic program for Brad.

For example, the physical therapist recommended that range of motion exercises be conducted on Brad's upper extremities prior to activities that required Brad to use his hands. She further recommended that he bear weight in a standing position on a daily basis in order to prevent hip dislocation. This could be accomplished by having Brad use a prone stander during two, 30-minute instructional periods each day when this would typically occur, such as standing at a counter in home economics class. The occupational therapist developed an adapted switchplate for Brad since he did not have isolated finger use. This could be attached to various small appliances (e.g., tape recorders, blenders, and a record player) so that Brad could activate a piece of equipment by using a downward movement of his hand. The mobility specialist felt that Brad needed to learn to use his residual vision in the functional context of transitions and transfers. Brad's teachers and mother were very much in favor of his interacting with nondisabled peers since they were well aware of the benefits from such interactions. Their goal was to have Brad interact on a daily basis with a his junior high classmates. The speech/language therapist suggested that Brad greet individuals by orienting toward them and smiling, and to follow simple verbal instructions within the context of a variety of social and instructional situations.

The team decided that all of these particular goals could be worked on throughout the school day. A peer interaction program was established with students from the junior high study hall. Several students who were free during that time period were scheduled to interact with Brad using leisure activities appropriate for teenagers. Prior to the program, the classroom teacher carried out range-of-motion exercises on Brad's upper extremities to produce relaxation; this enhanced his arm use. Upon arrival and greeting by his junior high school friend, Brad was taught to look in the direction of his friend and smile in order to greet him. Then they engaged in an activity together in which Brad used the adapted switchplate. For example, Brad used a tactile scan to locate the switchplate followed by activation of the tape recorder. While conducting these activities Brad was taught to respond to a simple command from his friend, "It's your turn. Hit the switch." This verbal instruction was accompanied by a touch cue on Brad's wrist. The classroom teacher designed the instruction and supervised implementation of the program by his peers.

After reading the above scenario/vignette, have participants answer the following questions:

1. What type of service delivery model was being employed at Grover Cleveland?

2. What were some of the benefits of this approach?

VI. References

American Occupational Therapy Association. (1986). *Guidelines for occupational therapy services in the school.* Rockville, MD: Author.

American Physical Therapy Association. (1985). *Physical therapy practice in educational environments: Policies, guidelines, and background information.* Alexandria, VA: Author.

American Physical Therapy Association. (1987). *Physical therapy practice in educational environments: Standards of practice.* Washington, D.C.: Author.

American Speech and Hearing Association. (1981). *Position statement on nonspeech communication.* Rockville, MD: Author.

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Bricker, D. (1976). Educational synthesizer. In M. A. Thomas (Ed.), *Hey, don't forget about me!* (pp. 84-97). Reston, VA: Council for Exceptional Children.

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Giangreco, M. F., Cloninger, C. J., & Iverson, V.S. (1990). *Cayuga-Onondaga assessment for children with handicaps Version 6.0.* Stillwater: Oklahoma State University, National Clearinghouse of Rehabilitation Training Materials.

Giangreco, M. F., Cloninger, C., & Iverson. (In preparation). *Cayuga-Onondaga assessment for children with handicaps.* Baltimore: Paul H. Brookes.

Horner, R. (1991). The future of applied behavior analysis for people with severe disabilities: Commentary I. In L. Meyer, C. Peck, & L. Brown (Eds.), *Critical issues in the lives of people with severe disabilities* (pp. 607-612). Baltimore: Paul H. Brookes.

Meyer, L. H., & Janney, R. (1989). User-friendly measures of meaningful outcomes: Evaluative behavioral interventions. *Journal of the Association for Persons with Severe Handicaps, 14*(4), 263-

270.

New York State Education Department. (1981). *Physical and occupational therapy in an educational setting.* Albany: The University of New York.

Rainforth, B., & York, J. (1987). Integrating related services in community instruction. *Journal of the Association for Persons with Severe Handicaps, 12,* 190-198.

Uzgiris, I., & Hunt, J. (1978). *Assessment in infancy: Ordinal scales of psychological development.* Urbana: University of Illinois Press.

Wood, M., Combs, C., Gunn, A., & Weller, D. (1986). *Developmental therapy in the classroom: Methods of teaching students with social, emotional, or behavioral handicaps* (2nd ed.). Austin, TX: Pro-Ed.

York, J., Giangreco, M., Macdonald, C., & Vandercook, T. (In press). Integrating support personnel in inclusive classrooms. In S. Stainback & W. Stainback (Eds.), *Curriculum considerations in inclusive classrooms: Facilitating learning for all students.* Baltimore: Paul H. Brookes.

VII. Sources for Additional Information

Albano, M., Cox, B., York, J., & York, R. (1981). Educational teams for students with severe multiple handicaps. In R. York, W. Schofield, D. Donder, D. Ryndak, & B. Reguly (Eds.), *Organizing and implementing services for students with severe and multiple handicaps* (pp. 23-34). Springfield: Illinois State Board of Education.

Publisher's address: Illinois State Board of Education
Publications
100 North First Street
Springfield, IL 62777
Phone number: (217) 782-6601
Cost of book: Available for loan

American Occupational Therapy Association. (1986). *Guidelines for occupational therapy services in school* (2nd ed.). Rockville, MD: AOTA.

Publisher's address: AOTA
1383 Piccard Drive
Rockville, MD 20850
Phone number: (301) 948-9626
Cost of book: $39.00

American Physical Therapy Association. (1985). *Physical therapy practice in educational environments: Policies, guidelines, and background information.* Alexandria, VA: APTA.

Publisher's address: APTA
1111 North Fairfax Street
Alexandria, VA 22314
Phone number: (703) 684-2782
Cost of book: $9.00

Giangreco, M. (1990). *Cayuga-Onondaga assessment for children with handicaps (Version 6.0).* Stillwater: Oklahoma State University, National Clearinghouse of Rehabilitation Training Materials.

Publisher's address: National Clearinghouse of Rehabilitation Training
Materials
Oklahoma State University
816 W. 6th Street
Stillwater, OK 74078
Phone number: (405) 624-7650
Cost of book: $5.50 (plus postage and handling)

Goetz, L., Guess, D., & Stremel-Campbell, K. (1987). *Innovative program design for individuals with dual sensory impairments.* Baltimore: Paul H. Brookes.

Publisher's address: Paul H. Brookes Publishing Company
P. O. Box 10624
Baltimore, MD 21285-0624
Phone number: (301) 638-3775
Cost of book: $29.95

Orelove, F. P., & Sobsey, D. (1987). *Educating children with multiple disabilities: A transdisciplinary approach.* Baltimore: Paul H. Brookes.

Publisher's address: Paul H. Brookes Publishing Company
P. O. Box 10624
Baltimore, MD 21285-0624
Phone number: (301) 638-3775
Cost of book: $28.00

Thousand, J. (1986). Developing the collaborative teaming process. In J. Thousand, T. Fox, R. Reid, J. Godek, W. Williams, & W. Fox (Eds.), *The homecoming model: Educating students who present*

intensive educational challenges within regular education environments (pp. 33-36). Burlington: Center for Developmental Disabilities, University of Vermont.

Publisher's address: Center for Developmental Disabilities
499 C Waterman Building
University of Vermont
Burlington, VT 05405

Phone number: (802) 656-4031

Cost of book: $4.00

Wolfensberger, W. (1977). *The principle of normalization in human services.* Ontario, Canada: G. Allan Roeher Institute.

Publisher's address: The National Reference Service
The G. Allan Roeher Institute
Kinsman Building, York University Campus
4700 Keele Street
Downsview, Ontario M3J1P3

Phone number: (416) 661-9611

Cost of book: $12.50

VIII. Evaluation Measures

A. Pre/Post Evaluation

Related Services and the Transdisciplinary Approach:
Parent and Service Provider Training Module

Giangreco & Eichinger

Name Pre

Date Post

# Points Possible: 20

Length of Time Allowed: 30 minutes

1. Briefly state three reasons why the role of family members is important to service delivery for students with dual sensory and multiple disabilities. (3 pts.)

2. Select two of the following six team members and state three roles performed by each of these team members: (6 pts.)
   a. Teacher
   b. Occupational Therapist
   c. Physical Therapist
   d. Parent
   e. Orientation and Mobility Instructor
   f. Speech/Language Therapist

3. What is meant by "Related Services" as specified in PL 94-142? (2 pts.)

4. Provide a brief description of what is meant by two of the following three types of related service delivery approaches: (3 pts.)
    a. Multidisciplinary
    b. Interdisciplinary
    c. Transdisciplinary (or Integrated Therapy)

5. State three benefits of the transdisciplinary (or integrated therapy) approach for students. (3 pts.)

6. State three benefits of the transdisciplinary (or integrated therapy) approach for families. (3 pts.)

B. Answer Key

1. Any three of the following reasons should be considered correct.

    a. Families know certain things about their children or youth better than anyone else.
    b. Families have the greatest vested interest in seeing their children or youth learn.
    c. Families are likely to include the only adults involved with the educational or therapeutic programs of their children or youth throughout their entire school careers.
    d. Families have access to information about capabilities of their children or youth in home and community settings to which others have no access.
    e. Families have the ability to influence the quality of educational services provided in their community.
    f. Families must live with the outcomes of decisions made by educational or therapeutic teams 24 hours a day, 365 days a year.

2. Any three roles of two team members listed below should be considered correct.

    a. Teacher:
        i. develops and implements educational programs;
        ii. synthesizes information from all team members;
        iii. organizes the classroom environment;
        iv. determines types of instructional arrangements and groupings;
        v. provides systematic instruction;
        vi. develops opportunities for interactions with nondisabled peers; and/or
        vii. trains and supervises paraprofessional staff.

    b. Occupational therapist:
        i. evaluates and intervenes with problems relating to functional performance of individuals with disabilities;
        ii. develops proper seating arrangements;
        iii. develops positioning and handling strategies;
        iv. designs adaptive equipment;
        v. designs handsplints and other orthotic devices;
        vi. teaches self-care skills;
        vii. teaches daily living skills;
        viii. develops feeding programs
        ix. develops handwriting activities; and/or
        x. works on various fine motor activities.

    c. Physical therapist:
        i. develops seating arrangements;
        ii. develops positioning and handling strategies;
        iii. provides gait training;
        iv. provides mobility instruction including wheelchair or walker use;
        v. selects appropriate adaptive equipment;
        vi. promotes movement facilitation;
        vii. maintains joint flexibility by conducting range of motion exercises;
        vii. develops gross motor programming;
        ix. promotes cardiovascular and cardiomuscular fitness; and/or
        x. provides skin care to avoid skin breakdown.

    d. Parent:
        i. specifies educational and functional priorities;
        ii. reports child or youth's skill levels in home and other nonschool environments;
        iii. identifies student's preferences;
        iv. highlights child or youth's strengths;

    - v. articulates the family's aspirations and dreams for the student in the future;
    - vi. provides historical information that would affect planning; and/or
    - vii. offers additional input to school personnel.

  - e. Orientation and mobility instructor:
    - i. teaches protective techniques;
    - ii. teaches search techniques;
    - iii. teaches orientation to the physical environment safely;
    - iv. teaches concept development; and/or
    - v. recommends travel aids and equipment adaptations.

  - f. Speech/language therapist:
    - i. determines child or youth's present level of functioning relative to communication skills;
    - ii. makes recommendations regarding communication program for the student; and/or
    - iii. recommends feeding programs and other activities related to oral motor functions.

3. Any definition that contains the following key points should be considered correct (key points are underlined).

   "The term 'related services' means transportation and such developmental, corrective, and other supportive services (including speech pathology and audiology, psychological services, physical and occupational therapy, recreation, and medical and counseling services, except that such medical services shall be for diagnostic and evaluation purposes only) as may be required to assist a child or youth with disabilities to benefit from special education, and includes the early identification and assessment of disabling conditions in children and youth."

4. Any two of the following should be considered correct.

   a. A multidisciplinary approach is based on the medical model. Under this model, professionals from each discipline assess and provide service to children and youth in isolation.

   b. An interdisciplinary model is characterized by communication among the various professionals regarding a particular student. However, program implementation remains isolated within this model; that is, each professional provides intervention specific to his discipline.

   c. The transdisciplinary model is characterized by collaboration among the various team members to develop mutual goals for the student. Inherent in this approach is the fact that the child or youth is viewed as a complete person. Thus, this approach is more holistic. In addition, there is role release in this model. Specialists provide training to other persons who are not members of that discipline to implement the specialized services; therefore, services are provided in an indirect rather than a direct manner. Parents are viewed as equal team members in a transdisciplinary approach.

      The integrated therapy approach is a variation of the transdisciplinary approach which extends the role release and shared focus foundation of the transdisciplinary model by suggesting that the team planning apply disciplinary expertise to the shared goals. Furthermore, the therapeutic techniques are implemented in a synthesized manner within functional activities in instructional or natural contexts (e.g., grocery stores, work settings, or functional skill routines in the classroom).

5. Any three of the following benefits should be considered correct.

   a. Provides specialized input in a synthesized manner.

    b. Supports the student's educational program.
    c. Minimizes the stigma of "pull out" therapy or help.
    d. Is longitudinal in nature.
    e. Limits to three or less the number of professionals with whom the student must interact.
    f. Creates more time for consultation which previously was spent in direct therapy.
    g. If age-appropriate, includes the student in decision-making.

6. Any three of the following should be considered correct.

    a. Includes family members as part of the team.
    b. Provides a support mechanism.
    c. Limits the number of professionals with whom the family must interact on a regular basis.
    d. Encourages decentralization (bringing the services to the students) which can result in home district placement (rather than a regional center) thus enhancing family access to the school program.
    e. Encourages a natural environmental approach which includes analysis of home and community needs which families face.
    f. Decreases excessive dependency of families on the presence of a specialist, since the family has learned how to incorporate specialized techniques within routine home and community activities.

C. **Participant Evaluation of Training**

A Series of Training Modules on Educating Children and Youth with Dual Sensory and Multiple Impairments

Participant Evaluation of Training

Related Services and the Transdisciplinary Approach:
Parent and Service Provider Training Module

Trainer: ______________________ Date of Training: ______________________

Training Site: ____

Please read each of the following statements carefully and rate each statement using the following key:

1 = Strongly Disagree (SD)
2 = Disagree (D)
3 = Undecided (U)
4 = Agree (A)
5 = Strongly Agree (SA)

		(SD)	(D)	(U)	(A)	(SA)
1.	Overall, the content of this training met my expectations.	1	2	3	4	5
2.	I learned useful information about roles and functions of various team members when working with students who have dual sensory and multiple impairments as a result of this training.	1	2	3	4	5
3.	I learned useful information about implications of the "Related Services" section of Public Law 94-142 as a result of this training.	1	2	3	4	5
4.	I learned useful information about major types of service delivery models used in schools and the benefits of a transdisciplinary approach as a result of this training.	1	2	3	4	5
5.	The training provided specific information that I can apply.	1	2	3	4	5
6.	The training content was applicable to my needs as a parent or service provider.	1	2	3	4	5
7.	Materials available from this training were relevant and beneficial.	1	2	3	4	5
8.	The trainer demonstrated competence in the areas of related services and service delivery models.	1	2	3	4	5

		(SD)	(D)	(U)	(A)	(SA)
9.	The trainer communicated clearly and effectively.	1	2	3	4	5
10.	The trainer was responsive to the questions and needs of participants.	1	2	3	4	5
11.	The trainer encouraged active involvement by participants and was able to facilitate group discussion.	1	2	3	4	5
12.	The trainer was able to effectively present information through utilization of a multisensory approach (i.e., lecture, activities, overheads, handouts, readings, or videos.)	1	2	3	4	5

13. After participating in these training activities, what ways do you plan to implement what you learned from these sessions?

14. What were the strengths of this training?

15. What follow-up needs can you identify for yourself?

16. In what ways could these training activities have been improved?

Appendix A

Overhead Transparencies

CONTENT OUTLINE

1. Families as Consumers of Professional Services

2. Functions of Educators and Related Service Professionals

3. Roles and Responsibilities of Team Members

(Overhead 1)

FUNCTIONS OF TEAM MEMBERS

a. Development of adaptations.

b. Facilitation of relevant academic and functional skills.

c. Reciprocal consultation with colleagues.

d. Removal or modification of barriers to participation.

e. Prevention of regression or pain.

f. Support and resource to families.

g. Remediation or restoration of identified deficits.

h. Promotion of sequenced developmental skills.

i. Assessment and subsequent educational program or therapeutic development, implementation, and evaluation.

j. Consensus decision-making.

(Overhead 2)

COMMON TEAM MEMBERS

1. Occupational Therapist (OT)
2. Orientation and Mobility Instructor (O & M)
3. Parent
4. Physical Therapist (PT)
5. Speech/Language Therapist
6. Teacher

(Overhead 3)

COMMON AREAS OF ROLE OVERLAP

OTE: The following overlaps are meant to familiarize the user with common areas of overlap. This is not intended to provide a comprehensive list of overlaps.

	Occupational Therapist	Orientation & Mobility	Parent & Family	Physical Therapist	Speech Therapist	Teacher
Occupational Therapist		making adaptations	making adaptations	making adaptations; seating; positioning; handling; equipment; physical management	feeding; other oral programs; posture	making adaptations; teaching self-care, daily living, recreational, and vocational skills
Orientation & Mobility	making adaptations		making adaptations; reporting skill levels in nonschool settings; teaching domestic and community skills	mobility training	pragmatic language usage in community settings	making adaptations; teaching travel, domestic, and community skills
Parent & Family	making adaptations; teaching daily living skills	making adaptations; reporting skill levels in nonschool settings		making adaptations; motor development	feeding; communication development	making adaptations; teaching daily living, community, domestic, recreational, communication, and social skills
Physical Therapist	making adaptations; seating; positioning; handling; equipment; physical management	mobility training	making adaptations; motor development		breathing; posture	making adaptations; motor programming
Speech Therapist	feeding; other oral programs; posture	pragmatic language usage in community settings	feeding; communication development	breathing; posture		communication; pragmatic language usage
Teacher	making adaptations; teaching self-care, daily living, recreational, and vocational skills	making adaptations; teaching travel, domestic and community skills	making adaptations; teaching daily living, community, domestic, recreational, communication and social skills	making adaptations; motor programming	communication; pragmatic language usage	

(Overhead 4)
(Giangreco & Eichinger, 1989)

CONTENT OUTLINE

1. The Definition and Interpretation of "Related Services" from PL 94-142

2. Forms of Team Interactions

3. The Mislabeling of Teams

4. Attitudes of Team Members

5. Approaches to Measurement

(Overhead 5)

THREE FORMS OF GROUP INTERACTIONS

a. Multidisciplinary

b. Interdisciplinary

c. Transdisciplinary (or Integrated Therapy)

(Overhead 6)

MULTIDISCIPLINARY

- Individualized assessments conducted by each member.
- Meet as a group to share information.
- Each member remains independent.
- Information exchanged is based on disciplinary biases.

(Overhead 7)

INTERDISCIPLINARY

- Case manager assigned to coordinate program

- Encourages reciprocal communication.

- May result in conflicting recommendations by members.

TRANSDISCIPLINARY (OR INTEGRATED THERAPY)

- Collaboration is based upon shared goals.
- Systematic transfer and sharing of information among members (i.e., "role release").
- Minimizes the number of people interacting with a particular student.
- Student is viewed in the context of the environment.
- Consumers are full members of the team.

(Overhead 9)

INTEGRATED THERAPY (A VARIATION OF THE TRANSDISCIPLINARY MODEL)

- Incorporates educational and therapeutic methods to cooperatively plan for common needs and goals.

- Implementation is synthesized and occurs within functional activities in natural environments.

- Reported as a best practice for students with dual sensory and multiple impairments.

(Overhead 10)

ATTITUDES OF TEAM MEMBERS

a. "More-is-Better"

b. "Return-on-Investment"

c. "Only-as-Special-as-Necessary"

(Overhead 11)

CONTENT OUTLINE

1. Characteristics of a Team

2. Benefits of the Transdisciplinary Approach for Students

3. Benefits of the Transdisciplinary Approach for Families

4. Benefits of the Transdisciplinary approach for Professionals

5. Benefits of the Transdisciplinary Approach for School Systems and Communities

(Overhead 12)

Appendix B

Handouts

RESOURCES FOR INFORMATION REGARDING PROFESSIONAL AND SUPPORT ORGANIZATIONS

For more information regarding occupational therapy contact:

American Occupational Therapy Association (AOTA)
1838 Piccard Drive
Rockville, MD 20850
Phone: (301) 948-9626

For more information regarding visual impairments contact:

American Foundation for the Blind, Inc.
15 West 16th Street
New York, NY 10011
Phone: (312) 620-2000

National Association for the Visually Handicapped
305 E. 24th Street
New York, NY 10010
Phone: (212) 889-3141

Association for Education & Rehabilitation of the Blind & Visually Impaired
Division for Orientation & Mobility
206 North Washington Street
Alexandria, VA 22314
Phone: (703) 548-1884

For information about families of persons with disabilities contact:

The Sibling Information Network
Connecticut's University Affiliated Facility
991 Main Street
East Hartford, CT 06108
Phone: (203) 486-3783

National Information Center for Handicapped Children & Youth
P.O. Box 1492
Washington, DC 20013
Phone: (703) 893-6061

Federation for Children with Special Needs
312 Stuart Street, 2nd Floor
Boston, MA 02116
Phone: 482-2915

(Handout 1-p. 1)

A magazine devoted to practical information for families is:

The Exceptional Parent
605 Commonwealth Avenue
Boston, MA 02115
Phone: (617) 536-8961

For more information regarding physical therapy contact:

American Physical Therapy Association (APTA)
1111 North Fairfax Street
Alexandria, VA 22314
Phone: (703) 684-2782

For more information regarding speech/language therapy contact:

American Speech, Language, and Hearing Association (ASHA)
10801 Rockville Pike
Rockville, MD 20852
Phone: (301) 897-5700 or (800) 636-6868

Alexander Graham Bell Association for the Deaf, Inc.
3417 Volta Place, NW
Washington, DC 20007
Phone: (202) 337-5220

National Association for the Deaf
2025 Eye Street, NW
Suite 321
Washington, DC 20006
Phone: (301) 587-1788

For information regarding education contact:

Council for Exceptional Children (CEC) or
ERIC Clearinghouse on Handicapped & Gifted Children
1920 Association Drive
Reston, VA 22091-1589
Phone: (703) 620-3660

National Clearing House of Rehabilitation Training Materials
Oklahoma State University
Stillwater, OK 74078
Phone: (405) 744-7650

The Association for Persons with Severe Handicaps (TASH)
7010 Roosevelt Way N.E.
Seattle, WA 98115
Phone: (206) 523-8446